

# DISTANCE EDUCATION

ANNA UNIVERSITY CHENNAI : : CHENNAI 600 025

REGULATIONS - 2009

CURRICULUM AND SYLLABI FOR I SEMESTER

## MASTER OF COMPUTER APPLICATION (MCA)

### SEMESTER I

CODE NO.	COURSE TITLE	M
<b>THEORY</b>		
DMC1911	<a href="#">Computer Organization</a>	100
DMC1912	<a href="#">Problem Solving Programming</a>	100
DMC1913	<a href="#">Database Management System</a>	100
DMC1914	<a href="#">Data Structure</a>	100
DMC1915	<a href="#">Accounting and Financial Management</a>	100
<b>PRACTICAL</b>		
DMC1916	<a href="#">Programming and Data Structure Lab</a>	100
DMC1917	<a href="#">Database Management System Lab</a>	100
<b>TOTAL</b>		<b>700</b>

### SEMESTER II

Code No.	Course Title	Marks
<b>Theory</b>		
<a href="#">DMC 1921</a>	<a href="#">Mathematical Foundations of Computer Science</a>	100
<a href="#">DMC 1922</a>	<a href="#">Object Oriented Programming</a>	100
<a href="#">DMC 1923</a>	<a href="#">Software Engineering</a>	100
<a href="#">DMC 1924</a>	<a href="#">System Software</a>	100
<a href="#">DMC 1925</a>	<a href="#">Operating System</a>	100
<a href="#">DBA 1605</a>	<a href="#">Communication Skills</a>	100
<b>Practical</b>		
<a href="#">DMC1926</a>	<a href="#">Object Oriented Programming Lab</a>	100
<a href="#">DMC1927</a>	<a href="#">System Software Lab</a>	100

### SEMESTER III

Code No.	Course Title	Marks
<b>Theory</b>		
<a href="#">DMC1931</a>	<a href="#">Computer Networks</a>	100
<a href="#">DMC1932</a>	<a href="#">Microprocessors and its Applications</a>	100
<a href="#">DMC1933</a>	<a href="#">Design and Analysis of Algorithms</a>	100
<a href="#">DMC1934</a>	<a href="#">Computer Graphics and Multimedia Systems</a>	100
<a href="#">DMC1935</a>	<a href="#">Web Programming</a>	100
	<a href="#">Elective I</a>	
<b>Practical</b>		
<a href="#">DMC1936</a>	<a href="#">Web Programming Lab</a>	100
<a href="#">DMC1937</a>	<a href="#">Graphics and Multimedia Lab</a>	100

**SEMESTER IV**

<b>Code No.</b>	<b>Course Title</b>	<b>Marks</b>
<b>Theory</b>		
<a href="#">DMC1941</a>	<a href="#">Unix and Network Programming</a>	100
<a href="#">DMC1942</a>	<a href="#">Resource Management Techniques</a>	100
<a href="#">DMC1943</a>	<a href="#">Object Oriented Analysis and Design</a>	100
<a href="#">DMC1944</a>	<a href="#">Visual Programming</a>	100
<a href="#">DMC1945</a>	<a href="#">Middleware Technologies</a>	100
	<a href="#">Elective II</a>	100
<b>Practical</b>		
<a href="#">DMC1946</a>	<a href="#">Network Programming Lab</a>	100
<a href="#">DMC1947</a>	<a href="#">Visual Programming Lab</a>	100

**SEMESTER V**

<b>Code No.</b>	<b>Course Title</b>	<b>Marks</b>
<b>Theory</b>		
<a href="#">DMC1951</a>	<a href="#">XML and Web Services</a>	100
<a href="#">DMC1952</a>	<a href="#">Software Project Management</a>	100
	<a href="#">Elective III</a>	100
	<a href="#">Elective IV</a>	100
	<a href="#">Elective V</a>	100
<b>Practical</b>		
<a href="#">DMC1953</a>	<a href="#">XML and Web Services Lab</a>	100
<a href="#">DMC1954</a>	<a href="#">Software Development Lab</a>	100

**SEMESTER VI**

<b>Code No.</b>	<b>Course Title</b>	<b>Marks</b>
DMC1961	Project Work	400

**LIST OF ELECTIVES**  
**M.C.A (MASTER OF COMPUTER APPLICATIONS)**

**III Semester M C A – Elective I**

S. No.	Code No.	Course Title	Marks
1.	<a href="#">DMC 1971</a>	<a href="#">Advanced Databases</a>	100
2.	<a href="#">DMC 1972</a>	<a href="#">TCP/IP Protocol Suite</a>	100
3.	<a href="#">DMC 1973</a>	<a href="#">Management Information System</a>	100

**IV Semester M C A – Elective II**

S. No.	Code No.	Course Title	Marks
1.	<a href="#">DMC 1974</a>	<a href="#">Mobile Computing</a>	100
2.	<a href="#">DMC 1975</a>	<a href="#">Software Agents</a>	100
3.	<a href="#">DMC 1976</a>	<a href="#">Human Resource Management</a>	100

**V Semester M C A – Elective III**

S. No.	Code No.	Course Title	Marks
1.	<a href="#">DMC 1977</a>	<a href="#">Information Security</a>	100
2.	<a href="#">DMC1978</a>	<a href="#">Introduction to E-Learning</a>	100
3.	<a href="#">DMC 1979</a>	<a href="#">Health Care Information System</a>	100

**V Semester M C A – Elective IV**

S. No.	Code No.	Course Title	Marks
1.	<a href="#">DMC 1980</a>	<a href="#">Electronic Commerce</a>	100
2.	<a href="#">DMC 1981</a>	<a href="#">Instructional Design for E-Learning</a>	100
3.	<a href="#">DMC 1982</a>	<a href="#">Knowledge Management</a>	100

**V Semester M C A – Elective V**

S. No.	Code No.	Course Title	Marks
1.	<a href="#">DMC 1983</a>	<a href="#">Web Graphics</a>	100
2.	<a href="#">DMC 1984</a>	<a href="#">E-Learning Technology</a>	100
3.	<a href="#">DMC 1985</a>	<a href="#">Data Warehousing and Data Mining</a>	100

**ANNA UNIVERSITY CHENNAI  
MCA (DISTANCE MODE)  
REGULATIONS – 2009  
SYLLABUS I TO VI SEMESTERS**

**SEMESTER – I**

**DMC1911                      COMPUTER ORGANIZATION**

**UNIT I                      INTRODUCTION TO DIGITAL DESIGN**

Data Representation – Data Types – Complements – Arithmetic Operations – Representations – Fixed –Point, Floating – Point , Decimal Fixed – Point – Binary Codes- Logic Gates, Boolean Algebra, Map Simplification – Combinational Circuits: Half-Adder, Full Adder- Flip Flops - Sequential Circuits

**UNIT II                      DIGITAL COMPONENTS - REGISTER TRANSFER & MICRO OPERATIONS**

ICs – Decoders – Multiplexers – Registers – Shift Registers – Binary Counters – Memory Unit – Register Transfer Language – Register Transfer – Bus And Memory Transfers – Arithmetic, Logic And Shift Micro Operations, Arithmetic Logic Shift Unit.

**UNIT III                      COMPUTER ORGANIZATION AND PROGRAMMING**

Instruction Codes – Computer Registers – Computer Instructions – Timing And Control – Instruction Cycle – Memory Reference Instructions – I/O And Interrupt – Machine Language – Assembly Language – Assembler - Program Loops – Programming Arithmetic And Logic Operations – Subroutines – I/O Programming.

**UNIT IV                      INPUT – OUTPUT ORGANIZATION**

Peripheral Devices – Input-Output Interface – Asynchronous Data Transfer – Modes Of Transfer – Priority Interrupt – DMA – IOP – Serial Communication.

**UNIT V                      MEMORY ORGANIZATION AND CPU**

Memory Hierarchy – Main Memory – Auxiliary Memory – Associative Memory – Cache Memory – Virtual Memory – Memory Management Hardware – CPU: General Register Organization – Control Word – Stack Organization – Instruction Format – Addressing Modes – Data Transfer And Manipulation – Program Control.

**TEXTBOOK**

1. M.Morris Mano,"Computer System Architecture",Prentice Hall of India, 2001.

**REFERNCES**

1. John .p.Hayes,"Computer Architecture and Organization", Tata McGraw Hill, 1996.
2. V.C.Hamatcher,et al "Computer Organization", Tata Mcgraw Hill,1996

**DMC1912****PROBLEM SOLVING AND PROGRAMMING****UNIT I INTRODUCTION TO COMPUTER PROBLEM SOLVING**

Introduction – The Problem Solving aspect – Top down Design – Implementation of Algorithms – Program Verification – Efficiency of Algorithms – Analysis of Algorithms

**UNIT II FUNDAMENTAL ALGORITHMS**

Introduction – Exchanging the values – Counting – Factorial Computation – SINE computation – Base Conversion – Factoring Methods – Array Techniques.

**UNIT III INTRODUCTION TO C LANGUAGE**

Overview of C – Constants, Variables and Data Types – Operators and Expressions – Managing Input/Output Operations – Formatted I/O – Decision Making - Branching — IF, Nested IF – Switch – goto - Looping- While, do, for statements.

**UNIT IV ARRAYS, FUNCTIONS, STRUCTURES AND UNIONS**

Arrays – dynamic and multi-dimensional arrays - Character arrays and Strings – String handling Functions - User defined Functions – Categories of Functions – Recursion - Structures and Unions – Array of Structures – Structures and Functions

**UNIT V POINTERS AND FILE MANAGEMENT**

Pointers – Declaration, Accessing a variable, character strings, pointers to functions and structures - File Management in C – Dynamic Memory allocation – Linked Lists – Preprocessors.

**TEXTBOOKS**

1. R.G.Dromey “ How to Solve it by Computer ”, PHI , 1998
2. E.Balagurusamy “ Programming in ANSI C ” , Tata McGraw Hill, 2004

**REFERNCES**

1. Deitel and Deitel “ C How to Program ”, Addison Wesley , 2001
2. Brian W.Kernighan & Dennis Ritchie “C Programming Language”, PHI, 1990
3. Byron.S.Gottfried “Schaum’s Outline of Programming with C ”, 2<sup>nd</sup> Edition,1996

## **DMC1913                      DATABASE MANAGEMENT SYSTEMS**

### **UNIT I                      INTRODUCTION**

Database Systems vs. File Systems-View of Data- Data Models-Database Languages-Transaction Management-Database Systems Structure-History of Database Systems-Database Systems Applications-Entity Relationship Model

### **UNIT II                      RELATIONAL DATABASES**

SQL-Basic Structure-Set Operations-Complex Queries-Joined Queries-DDL-Embedded SQL-Dynamic SQL-Other SQL Functions-Query by Example-Integrity and Security of searching-Relational Database Design

### **UNIT III                      DATA STORAGE AND INDEXING**

Storage & File Structure-Disks-RAID-File Organization-Indexing & Hashing-B+ TREE-B Tree-Static Hashing-Dynamic Hashing-Multiple Key Access

### **UNIT IV                      QUERY EVALUATION & OPTIMIZATION**

Query Processing - Selection Operation – Sorting - Join Operation - Evaluation of Expressions - Query Optimization

### **UNIT V                      TRANSACTION MANAGEMENT**

Transaction Concept-Static Implementation-Concurrency Control-Protocols-Deadlock Handling-Recovery Systems-Recovery with Concurrent Transactions-Shadow Paging-Buffer Management-Case Studies-Oracle-Microsoft SQL Server

## **REFERENCES**

1. Abraham Silberschatz, Henry F.Korth and S.Sudharssan,"Database System Concepts", 4<sup>th</sup> Edition, Tata McGraw Hill, 2002
2. Raghu Ramakrishnan & Johannesgerhrke, "Data Base Management Systems", Mc Graw Hill International Edition, 2000

**DMC1914****DATA STRUCTURE****UNIT I DATA STRUCTURES**

Introduction – Arrays – Structures – Stack: Definition and examples, Representing Stacks - Queues and lists: Queue and its Representation, lists – Applications of Stack, Queue and Linked Lists.

**UNIT II TREES**

Binary Trees – Operations on binary trees - Binary Tree Representations – node representation, internal and external nodes, implicit array representation – Binary tree Traversals - Huffman Algorithm – Representing Lists as Binary Trees

**UNIT III SORTING AND SEARCHING**

General Background – Exchange sorts – Selection and Tree Sorting – Insertion Sorts – Merge and Radix Sorts – Basic Search Techniques – Tree Searching – General Search Trees – Hashing.

**UNIT IV GRAPHS AND THEIR APPLICATIONS**

Graphs – An application of graphs – Representation – transitive closure - Warshall's algorithm – Shortest path algorithm - a flow Problem – Dijkstra's algorithm – An application of scheduling - Linked representation of Graphs – Graph Traversals

**UNIT V STORAGE MANAGEMENT**

General Lists: Operations, linked list representation, using lists, Freeing list nodes - Automatic list Management: Reference count method, Garbage Collection, Algorithms, Collection and compaction

**TEXTBOOK**

1. Tanaenbaum A.S.,Langram Y. Augestein M.J “ Data Structures using C” Pearson Education , 2004

**REFERNCES**

1. Robert Kruse & Clovis L. Tondo “ Data Structures and Program Design in C”,Prentice Hall , 2nd edition.,1991.
2. Weiss “Data Structures and Algorithm Analysis in C ” ,Addison Wesley , Second Edition, 1997.

**UNIT I FINANCIAL ACCOUNTING**

Meaning and Scope of Accounting-Principles-Concepts-Conventions-Accounting Standards-Final Accounts-Trial Balance-Trading Account-Profit and Loss Account-Balance Sheet-Accounting Ratio Analysis-Funds Flow Analysis-Cash Flow Analysis

**UNIT II ACCOUNTING**

Meaning-Objectives-Elements of Cost-Cost Sheet-Marginal Costing and Cost Volume Profit Analysis-Break Even Analysis-Applications-Limitations-Standard Costing and Variance Analysis-Material-Labor-Overhead-Sales-Profit Variances

**UNIT III BUDGETS AND BUDGETING CONTROL**

Budgets and Budgetary Control-Meaning-Types-Sales Budget-Production Budget-Cost of Production Budget-Flexible Budgeting-Cash Budget-Master Budget-Zero Base Budgeting-Computerized Accounting

**UNIT IV INVESTMENT DECISION AND COST OF CAPITAL**

Objectives and Functions of Financial Management-Risk-Return Relationship-Time Value of Money Concepts-Capital Budgeting-Methods of Appraisal-Cost of Capital Factors Affecting Cost of Capital-Computation for Each Source of Finance and Weighted Average Cost of Capital

**UNIT V FINANCING DECISION AND WORKING CAPITAL MANAGEMENT**

Capital Structure-Factors Affecting Capital Structure-Dividend Policy-Types of Dividend Policy-Concepts of Working Capital-Working Capital Policies-Factors affecting Working Capital-Estimation of Working Capital Requirements

**TEXTBOOK**

1. S.N.Maheswari, "Financial and Management Accounting", Sultan Chand & Sons, 2003
2. I.M.Pandey, "Financial Management", Vikas Publications, 4<sup>th</sup> Reprint, 2002

**REFERENCES**

1. S.P.Iyengar, "Cost and Management Accounting", Sultan Chand & Co,
2. I.M.Pandey, "Elements of Management Accounting" Vikas Publishing House, 1993



## **DMC1916 PROGRAMMING and DATA STRUCTURES LABORATORY**

- Simple C programs
- Files and Structures
- Array Implementation
- Dynamic Memory allocation
- Implementation of Stacks
- Linked List Implementation
- Queue Implementation
- Implementation of Binary Search Tree and Linear Search
- Sorting Algorithm, Simple sorting and Queue Sorting

## **DMC1917 DBMS LAB**

1. Creation of base tables and views.
2. Data Manipulation  
INSERT, DELETE and UPDATE in tables  
SELECT, Sub Queries and JOIN
3. Data Control Commands
4. High level language extensions – PL/SQL. Or Transact SQL
5. Use of Cursors, Procedures and Functions
6. Embedded SQL or Database Connectivity.
  - a. Oracle or SQL Server Triggers.
  - b. Working with Forms, Menus and Reports.
  - c. Front-end tools – Visual Basic/Developer 2000

## **SEMESTER – II**

### **DMC 1921 MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE**

#### **UNIT I MATRIX ALGEBRA**

Matrices, Rank of Matrix, Solving System of Equations-Eigen Values and Eigen Vectors-Inverse of a Matrix - Cayley Hamilton Theorem

#### **UNIT II BASIC SET THEORY**

Basic Definitions - Venn Diagrams and set operations - Laws of set theory - Principle of inclusion and exclusion - partitions- Permutation and Combination - Relations- Properties of relations - Matrices of relations - Closure operations on relations - Functions - injective, surjective and bijective functions.

#### **UNIT III MATHEMATICAL LOGIC**

Propositions and logical operators - Truth table - Propositions generated by a set, Equivalence and implication - Basic laws- Some more connectives - Functionally complete set of connectives- Normal forms - Proofs in Propositional calculus - Predicate calculus.

#### **UNIT IV FORMAL LANGUAGES**

Languages and Grammars-Phrase Structure Grammar-Classification of Grammars-Pumping Lemma For Regular Languages-Context Free Languages.

#### **UNIT V FINITE STATE AUTOMATA**

Finite State Automata-Deterministic Finite State Automata(DFA), Non Deterministic Finite State Automata (NFA)-Equivalence of DFA and NFA-Equivalence of NFA and Regular Languages.

#### **REFERENCES**

1. Kenneth H.Rosen, “ Discrete Mathematics and Its Applications”, Tata McGraw Hill, Fourth Edition, 2002 (Unit 1,2 & 3).
2. Hopcroft and Ullman, “Introduction to Automata Theory, Languages and Computation”, Narosa Publishing House, Delhi, 2002. ( Unit 4,5)
3. A.Tamilarasi & A.M.Natarajan, “Discrete Mathematics and its Application”, Khanna Publishers, 2<sup>nd</sup> Edition 2005.
4. M.K.Venkataraman “Engineering Mathematics”, Volume II, National Publishing Company, 2<sup>nd</sup> Edition,1989.

## **DMC 1922 OBJECT ORIENTED PROGRAMMING**

### **UNIT I FUNDAMENTALS**

Object–Oriented Programming concepts – Encapsulation – Programming Elements – Program Structure – Enumeration Types — Functions and Pointers – Function Invocation – Overloading Functions – Scope and Storage Class – Pointer Types – Arrays and Pointers – Call–by–Reference – Assertions – Standard template library.

### **UNIT II IMPLEMENTING ADTS AND ENCAPSULATION**

Aggregate Type struct – Structure Pointer Operators – Unions – Bit Fields – Data Handling and Member Functions – Classes – Constructors and Destructors – Static Member – this Pointer – reference semantics – implementation of simple ADTs.

### **UNIT III POLYMORPHISM**

ADT Conversions – Overloading – Overloading Operators – Unary Operator Overloading – Binary Operator Overloading – Function Selection – Pointer Operators – Visitation – Iterators – containers – List – List Iterators.

### **UNIT IV TEMPLATES**

Template Class – Function Templates – Class Templates – Parameterizing – STL – Algorithms – Function Adaptors.

### **UNIT V INHERITANCE**

Derived Class – Typing Conversions and Visibility – Code Reuse – Virtual Functions – Templates and Inheritance – Run–Time Type Identifications – Exceptions – Handlers – Standard Exceptions.

### **REFERENCES:**

1. Ira Pohl, "Object–Oriented Programming Using C++", Pearson Education, Second Edition, 2003.
2. Stanley B.Lippman, Josee Lajoie, "C++ Primer", Pearson Education, Third Edition, 2004.
3. Kamthane," Object Oriented Programming with ANSI and Turbo C++", Person Education, 2002.
4. Bhave , " Object Oriented Programming With C++", Pearson Education , 2004.

## **DMC 1923 SOFTWARE ENGINEERING**

### **UNIT I INTRODUCTION**

Software Engineering paradigms – Waterfall Life cycle model – Spiral Model – Prototype Model – fourth Generation Techniques – Planning – Cost Estimation – Organization Structure – Software Project Scheduling, – Risk analysis and management – Requirements and Specification – Rapid Prototyping.

### **UNIT II SOFTWARE DESIGN**

Abstraction – Modularity – Software Architecture – Cohesion – Coupling – Various Design Concepts and notations – Real time and Distributed System Design – Documentation – Dataflow Oriented design – Jackson System development – Designing for reuse – Programming standards.

### **UNIT III SOFTWARE METRICS**

Scope – Classification of metrics – Measuring Process and Product attributes – Direct and Indirect measures – Reliability – Software Quality Assurance – Standards.

### **UNIT IV SOFTWARE TESTING AND MAINTENANCE**

Software Testing Fundamentals – Software testing strategies – Black Box Testing – White Box Testing – System Testing – Testing Tools – Test Case Management – Software Maintenance Organization – Maintenance Report – Types of Maintenance.

### **UNIT V SOFTWARE CONFIGURATION MANAGEMENT (SCM) & CASE TOOLS**

Need for SCM – Version Control – SCM process – Software Configuration Items – Taxonomy – Case Repository – Features.

### **REFERENCES:**

1. Roger S. Pressman, "Software Engineering: A Practitioner Approach", Sixth edition, McGrawHill, 2005.
2. I. Sommerville, "Software Engineering", Sixth Edition, Addison Wesley-Longman, 2004.
3. Pankaj Jalote, "An Integrated approach to Software Engineering", Second Edition, Springer Verlag, 1997.

**DMC 1924 SYSTEM SOFTWARE****UNIT I INTRODUCTION**

Introduction – System software and machine architecture – The Simplified Instructional Computer (SIC) – Machine Architectures (SIC and SIC/XE) – Data and Instruction Formats – Addressing Modes – Instruction sets – I/O Programming.

**UNIT II ASSEMBLERS**

Basic assembler functions – A simple SIC assembler – Assembler algorithms and data structures – Machine dependent assembler features, Instruction formats and addressing modes – Program relocation – Machine independent assembler features – Literals – Symbol-defining statements – Expressions – Program Blocks – Control Sections and Program Linking – One Pass Assembler and Multipass Assemblers - Implementation examples MASM assembler.

**UNIT III LOADERS AND LINKERS**

Basic loader functions: Design of an Absolute Loader – A Simple Bootstrap Loader Machine dependent loader features Relocation – Program Linking – Algorithm and Data Structures for Linking Loader. Machine-independent loader features – Automatic Library Search – Loader Options Loader design options – Linkage Editors – Dynamic Linking – Bootstrap Loaders. Implementation examples: MSDOS linker.

**UNIT IV MACRO PROCESSORS**

Basic macro processor functions – Macro Definition and Expansion – Macro Processor Algorithm and data structures – Machine – independent macro processor features – Concatenation of Macro Parameters – Generation of Unique Labels – Conditional Macro Expansion – Keyword Macro Parameters – Macro Processor Design Options – Recursive Macro Expansion – Algorithm – General Purpose macro Processors – Macro Processing within Language Translators - Implementation examples: MASM Macro Processor – ANSI C macro language.

**UNIT V OTHER SYSTEM SOFTWARE**

Text editors – Overview of Editing Process - User Interface – Editor Structure – Interactive Debugging Systems – Debugging functions and capabilities – Relationships with Other parts of the system – User Interface Criteria.

**TEXT BOOKS:**

1. Leland Beck - "System Software – An Introduction to Systems Programming", Third Edition, Pearson Education, Inc., 1999.

**REFERENCES:**

1. D. M. Dhamdhare, " Systems Programming and Operating Systems", Tata McGraw Hill Company, 1999.
2. John J. Donovan, "Systems Programming", Tata McGraw Hill Company, 1991.

## **DMC 1925 OPERATING SYSTEMS**

### **UNIT I INTRODUCTION**

Introduction – Operating Systems and services – Processes – CPU Scheduling approaches

### **UNIT II PROCESS SYNCHRONIZATION**

Process synchronization – Semaphores – Deadlocks – Handling deadlocks – Multithreading

### **UNIT III MEMORY MANAGEMENT**

Memory management – Paging – Segmentation – Virtual Memory – Demand paging – Replacement Algorithms

### **UNIT IV DISK SCHEDULING**

Disk Scheduling approaches – File systems – Design issues – User interfaces to file systems – I/O device management.

### **UNIT V CASE STUDIES**

Case study – Design and implementation of the UNIX OS, Process model and structure – Memory management – File system – UNIX I/O management and device drivers – Windows – System components – Process Management – Memory management – File Systems – Networking

### **REFERENCES:**

1. Abraham Silberschatz Peter B. Galvin, G. Gagne, "Operating System Concepts", Sixth Edition, Addison Wesley Publishing Co., 2003.
2. M. J. Bach, "Design Of The Unix Operating System", Pearson Education.
3. Willam-Stalling " Operating System" Fourth Edition, Pearson Education, 2003.

## **DBA1605 COMMUNICATION SKILLS**

### **1. COMMUNICATION IN BUSINESS**

Systems approach, forms of business communication, management and communication, factors facilitating communication.

### **2. COMMUNICATION PROCESS**

Interpersonal perception, selective attention, feedback, variables, listening barriers to listening, persuasion, attending and conducting interviews, participating in discussions, debates and conferences, presentation skills, paralinguistic features, oral fluency development.

### **3. BUSINESS CORRESPONDENCE**

Business letter. Memos, minutes, agendas, enquiries, orders, sales letters, notice, tenders, letters of application, letter of complaints.

### **4. TECHNICAL REPORTS**

Format, Choice of vocabulary, coherence and cohesion, paragraph writing, organization.

### **5. PROJECT REPORTS**

Project proposal, project reports, appraisal reports.

#### **TEXT BOOKS:**

1. Sharan J.Genrson and Steven M.Gerson – “Technical Writing – Process and Product” – Pearson Education – 2000.
2. Raymond V.Lesikar, John D. Pettit and Mary E.Flatley – Lesikass Basic Communication Tata McGraw Will 8<sup>th</sup> Edition – 1999.
3. Stevel. E. Pauley, Daniel G.Riordan – Technical Report Writing Today – AITBS Publishing & Distributors, India 5<sup>th</sup> edition – 2000.
4. Robert L.Shurter, Effective letters in business Thrid Ed. 1983.

#### **REFERENCES:**

1. McGraith – Basic Managerial Skills for all Prentice Hall of India – 6<sup>th</sup> Edition 2002.
2. Halliday, M.A.Ky R.Hasan, Cohesion in English, Longman, London 1976.

## **DMC 1926 OBJECT ORIENTED PROGRAMMING LAB**

1. Write a C++ Program to illustrate Enumeration and Function Overloading
2. Write a C++ Program to illustrate Scope and Storage class
3. Implementation of ADT such as Stack and Queues
4. Write a C++ Program to illustrate the use of Constructors and Destructors and Constructor Overloading
5. Write a Program to illustrate Static member and methods
6. Write a Program to illustrate Bit fields
7. Write a Program to overload as binary operator, friend and member function
8. Write a Program to overload unary operator in Postfix and Prefix form as member and friend function
9. Write a Program to illustrate Iterators and Containers
10. Write a C++ Program to illustrate function templates
11. Write a C++ Program to illustrate template class
12. Write C++ Programs and incorporating various forms of Inheritance
13. Write a C++ Program to illustrate Virtual functions
14. Exception Handling

## **DMC 1927 SYSTEM SOFTWARE LAB**

1. Assemblers.
2. Linkers.
3. Loaders.
4. Features of text editors.
5. Basic UNIX commands.
6. Shell Programming.
7. Grep, sed, awk.
8. File system related system calls.
9. Process management – Fork, Exec.
10. Message queues.
11. Pipe, FIFO's.
12. Signals.
13. Shared memory.



## **SEMESTER – III**

### **DMC 1931 COMPUTER NETWORKS**

#### **1. INTRODUCTION**

Building a network – Requirements – Network Architecture – OSI – Internet – Direct Link Networks – Hardware building blocks – Framing – Error detection – Reliable transmission.

#### **2. NETWORK FUNDAMENTALS**

LAN Technology – LAN Architecture – BUS/Tree – Ring – Star – Ethernet – Token Rings – Wireless.

#### **3. NETWORK LAYER**

Packet Switching – Switching and Forwarding – Bridges and LAN switches – Internetworking – Simple Internetworking – Routing.

#### **4. TRANSPORT LAYER**

Reliable Byte Stream (TCP) – Simple Demultiplexer (UDP) – TCP Congestion Control – Congestion Avoidance Mechanisms.

#### **5. PRESENTATION LAYER and APPLICATIONS**

Presentation formatting – Data compression – Cryptographic Algorithms: RSA - DES — Applications – Domain Name Service – Email - SMTP – MIME – HTTP – SNMP.

#### **TEXT BOOK**

1. Larry L. Peterson & Bruce S. Davie, “Computer Networks - A systems Approach”, 2nd Edition, Harcourt Asia/Morgan Kaufmann, 2000.

#### **REFERENCES**

1. James F. Kurose and Keith W. Ross, “Computer Networking - A Top Down Approach featuring the Internet”, 1<sup>st</sup> Edition, Addison Wesley Publishing Company, 2001.
2. William Stallings, “Data and Computer Communications”, 5<sup>th</sup> Edition, PHI, 1997.
3. Andrew S. Tanenbaum, “Computer Networks”, Tata Mcgraw Hill, 3<sup>rd</sup> Edition, 2001.

## **DMC 1932 MICROPROCESSORS AND ITS APPLICATIONS**

### **UNIT I THE 8086 PROCESSOR - SOFTWARE ASPECTS**

Evolution of Microprocessors - 8086 architecture – Addressing modes-  
Instruction set and assembler directives – Assembly language programming –  
Interrupts and interrupt service routines.

### **UNIT II 8086 SYSTEM DESIGN**

8086 signals description – Basic configurations - System bus timing –System  
design using 8086 – Minimum mode /Maximum modes 8086 system and timings.

### **UNIT III INTERFACING CONCEPTS**

Memory Interfacing and I/O interfacing - Parallel communication interface –  
Serial communication interface – Timer – Keyboard /display controller – Interrupt  
controller – DMA controller – Programming and applications.

### **UNIT IV ADVANCED PROCESSORS**

Intel 80286 – Internal Architectural – Register Organization – Internal Block  
Diagram – Modes of operation – Real Address Mode – Protected Virtual Address  
mode – Privilege – Protection - Architectural features and Register Organization  
of i386, i486 and Pentium processors.

### **UNIT V BUILDING SYSTEMS**

Bus Concepts – Bus Standards –The Peripheral Component Interconnect (PCI)  
Bus – Universal Serial Bus (USB) – Platform Architectures.

### **REFERENCES:**

1. A. K. Ray & K. M. Bhurchandi, "Advanced Microprocessors and peripherals-  
Architectures, Programming and Interfacing", TMH, 2002 reprint.
2. Barry B. Brey, "The Intel Microprocessors, 8086/8088, 80186/80188, 80286,  
80386, 80486, Pentium, PentiumPro Processor, PentiumII, PentiumIII,  
PentiumIV, Architecture, Programming & Interfacing", 6<sup>th</sup> Edition, Pearson  
Education/PHI, 2002.
3. Yu-cheng Liu, Glenn A. Gibson, "Microcomputer systems: The 8086/8088 Family  
architecture, Programming and Design", PHI 2003.
4. Peter Abel, "IBM PC Assembly language and programming", Prentice Hall of  
India Pvt. Ltd.
5. Websites of latest processors.

## **DMC 1933 DESIGN AND ANALYSIS OF ALGORITHMS**

### **UNIT I INTRODUCTION**

Fundamentals of algorithmic problem solving – Important problem types – Fundamentals of the analysis of algorithm efficiency – analysis frame work – Asymptotic notations – Mathematical analysis for recursive and non-recursive algorithms.

### **UNIT II DIVIDE AND CONQUER METHOD AND GREEDY METHOD**

Divide and conquer methodology – Merge sort – Quick sort – Binary search – Binary tree traversal – Multiplication of large integers – Strassen's matrix multiplication – Greedy method – Prim's algorithm – Kruskal's algorithm – Dijkstra's algorithm.

### **UNIT III DYNAMIC PROGRAMMING**

Computing a binomial coefficient – Warshall's and Floyd' algorithm – Optimal binary search tree – Knapsack problem – Memory functions.

### **UNIT IV BACKTRACKING AND BRANCH AND BOUND**

Backtracking – N-Queens problem – Hamiltonian circuit problem – Subset sum problem – Branch and bound – Assignment problem – Knapsack problem – Traveling salesman problem.

### **UNIT V NP-HARD AND NP-COMPLETE PROBLEMS**

P & NP problems – NP-complete problems – Approximation algorithms for NP-hard problems – Traveling salesman problem – Knapsack problem.

### **REFERENCES:**

1. Anany Levitin "Introduction to the Design and Analysis of Algorithms" Pearson Education 2003.
2. Thomas H.Cormen, Charles E.Leiserson, Ronald L.Rivest, "Introduction to algorithms" Prentice Hall 1990.

## **DMC1934 COMPUTER GRAPHICS AND MULTIMEDIA SYSTEMS**

### **1. INTRODUCTION**

Overview of Graphics System - Bresenham technique – Line Drawing and Circle Drawing Algorithms - DDA - Line Clipping - Text Clipping.

### **2. 2D TRANSFORMATIONS**

Two dimensional transformations – Scaling and Rotations - Interactive Input methods - Polygons - Splines – Bezier Curves - Window view port mapping transformation.

### **3. 3D TRANSFORMATIONS**

3D Concepts - Projections – Parallel Projection - Perspective Projection – Visible Surface Detection Methods - Visualization and polygon rendering – Color models – XYZ-RGB-YIQ-CMY-HSV Models - animation – Key Frame systems - General animation functions - morphing.

### **4. OVERVIEW OF MULTIMEDIA**

Multimedia hardware & software - Components of multimedia – Text, Image – Graphics – Audio – Video – Animation – Authoring.

### **5. MULTIMEDIA SYSTEMS AND APPLICATIONS**

Multimedia communication systems – Data base systems – Synchronization Issues – Presentation requirements – Applications – Video conferencing – Virtual reality – Interactive video – video on demand

### **TEXT BOOKS**

1. Hearn D and Baker M.P, “Computer graphics – C Version”, 2<sup>nd</sup> Edition, Pearson Education, 2004 (unit 1, 2 &3).
2. Ralf Steinmetz, Klara Steinmetz, “Multimedia Computing, Communications and Applications”, Pearson education, 2004 (unit 4 & 5).

### **REFERENCES**

1. Siamon J. Gibbs and Dionysios C. Tsichritzis, “Multimedia programming”, Addison Wesley, 1995.
2. John Villamil, Casanova and Leony Fernandez, Eliar, “Multimedia Graphics”, PHI, 1998.

## **DMC 1935 WEB PROGRAMMING**

### **UNIT I BASIC INTERNET CONCEPTS**

Connecting to the Internet – Domain Name System - Exchanging E-mail – Sending and Receiving Files - Fighting Spam, Sorting Mail and avoiding e-mail viruses – Chatting and Conferencing on the Internet – Online Chatting - Messaging – Usenet Newsgroup – Internet Relay chat (IRC) – Instant Messaging - Voice and Video Conferencing.

### **UNIT II WORLD WIDE WEB**

Overview – Web Security, Privacy, and site-blocking – Audio and Video on the web – Creating and Maintaining the Web – Web site creation concepts – Web Page Editors – Optimizing Web Graphics – Web Audio Files – Forms, Interactivity, and Database-Driven Web sites – File Transfer and downloading – FTP – Peer to Peer – Downloading and Installing software.

### **UNIT III JAVA FUNDAMENTALS**

Java features – Java Platform – Java Fundamentals – Expressions, Operators, and Control Structures – Classes, Packages and Interfaces – Exception Handling.

### **UNIT IV PACKAGES**

AWT package – Layouts – Containers – Event Package – Event Model – Painting – Garbage Collection - Multithreading – Language Packages.

### **UNIT V ADVANCED JAVA PROGRAMMING**

Utility Packages – Input Output Packages – Inner Classes – Java Database Connectivity - Servlets - RMI – Java Beans.

### **TEXT BOOK**

1. Margaret Levine Young, "Internet and WWW", 2<sup>nd</sup> Edition, Tata McGraw Hill, 2002. (Unit 1 & 2)
2. Herbert Schildt, The Complete Reference – Java 2 , 4<sup>th</sup> Edition, Tata McGraw Hill, 2001. (Unit 3, 4 & 5)

### **REFERENCES**

1. Keyur shah, "Gateway to Java Programmer Sun Certification", Tata Mc Graw Hill 2002.
2. Deitel & Deitel, Java How to Program, Prentice Hall 1999.

## **DMC 1936 WEB PROGRAMMING LAB**

1. Studying internet connection procedures
2. Sending and receiving mails from one or more email clients
3. Video Conferencing demonstration
4. Downloading and installing softwares (Example: Java) and setting up path and class path
5. Using FTP
6. Creation of web site with forms, frames, links, tables etc with any web page editors and using images and audio files as part of web pages
7. Writing Java programs by making use of class, interface, package, etc for the following
  - # Different types of inheritance study
  - # Uses of 'this' keyword
  - # Polymorphism
  - # Creation of user specific packages
  - # Creation of jar files and using them
  - # User specific exception handling
8. Writing window based GUI applications using frames and applets such as Calculator application, Fahrenheit to Centigrade conversion etc
9. Application of threads examples
10. Reading and writing text files
11. Reading image files and manipulating them with image related classes and methods
12. writing an RMI application to access a remote method
13. Writing a Servlet program with database connectivity for a web based application such as students result status checking, PNR number enquiry etc
14. Creation and usage of Java bean

## **DMC1937 GRAPHICS AND MULTIMEDIA LAB**

1. Write a C program with Fundamental Graphics Function
2. Write a C program for Line drawing using Bresenham, DDA Line Drawing Algorithms.
3. Write a C program for Circle Drawing using Bresenham Circle Drawing Algorithms.
4. Write a C program for Clipping Algorithm using Line Clipping.
5. Write a C program for 2D Transformations like Translations and Scaling and Rotations.
6. Write a C program for 3D Transformations like Translations and Scaling and Rotations.
7. Create Frame by Frame Animations using multimedia authoring tools.
8. Develop a presentation for a product using techniques like Guide Layer, masking and onion Skin using authoring tools.
9. Create a Jpeg image which demonstrates the various features of an image editing tool.
10. Demonstrate Rasterization and filtering of layers and give blending effects for a logo

## **SEMESTER IV**

### **DMC1941 UNIX AND NETWORK PROGRAMMING**

#### **1. INTRODUCTION & FILE SYSTEM**

Overview of UNIX OS - File I/O – File Descriptors – File sharing - Files and directories – File types - File access permissions – File systems – Symbolic links - Standard I/O library – Streams and file objects – Buffering - System data files and information - Password file – Group file – Login accounting – system identification.

#### **2. PROCESSES**

Environment of a UNIX process – Process termination – command line arguments - Process control – Process identifiers - Process relationships terminal logins – Signals -threads.

#### **3. INTERPROCESS COMMUNICATION**

Introduction - Message passing (SVR4)- pipes – FIFO – message queues - Synchronization (SVR4) – Mutexes – condition variables – read – write locks – file locking – record locking – semaphores –Shared memory(SVR4).

#### **4. SOCKETS**

Introduction – transport layer – socket introduction - TCP sockets – UDP sockets - raw sockets – Socket options - I/O multiplexing - Name and address conversions.

#### **5. APPLICATIONS**

Debugging techniques - TCP echo client server - UDP echo client server - Ping - Trace route - Client server applications like file transfer and chat.

#### **TEXT BOOKS**

1. W.Richard Stevens, “Advanced programming in the UNIX environment”, Addison Wesley, 1999.(Unit 1,2 &3)
2. W. Stevens, Bill Fenner, Andrew Rudoff, “Unix Network Programming”, Volume 1, The Sockets Networking API,3<sup>rd</sup> Edition, Pearson education, Nov 2003.(unit 4 & 5)

#### **REFERENCE BOOKS**

1. Meeta Gandhi,Tilak Shetty and Rajiv Shah “The ‘C’ Odyssey Unix –The open Boundless C”, 1<sup>st</sup> Edition ,BPB Publications1992.



## **DMC 1942 RESOURCE MANAGEMENT TECHNIQUES**

### **UNIT I LINEAR PROGRAMMING MODELS**

Mathematical Formulation - Graphical Solution of linear programming models – Simplex method – Artificial variable Techniques- Variants of Simplex method

### **UNIT II TRANSPORTATION AND ASSIGNMENT MODELS**

Mathematical formulation of transportation problem- Methods for finding initial basic feasible solution – optimum solution - degeneracy – Mathematical formulation of assignment models – Hungarian Algorithm – Variants of the Assignment problem

### **UNIT III INTEGER PROGRAMMING MODELS**

Formulation – Gomory's IPP method – Gomory's mixed integer method – Branch and bound technique.

### **UNIT IV SCHEDULING BY PERT AND CPM**

Network Construction – Critical Path Method – Project Evaluation and Review Technique – Resource Analysis in Network Scheduling

### **UNIT V QUEUEING MODELS**

Characteristics of Queuing Models – Poisson Queues -  $(M / M / 1) : (FIFO / \infty / \infty)$ ,  $(M / M / 1) : (FIFO / N / \infty)$ ,  $(M / M / C) : (FIFO / \infty / \infty)$ ,  $(M / M / C) : (FIFO / N / \infty)$  models.

### **TEXT BOOKS**

Taha H.A., "Operations Research : An Introduction " 7<sup>th</sup> Edition, Pearson Education, 2004.

### **REFERENCES**

A.M.Natarajan, P.Balasubramani, A.Tamilarasi, "Operations Research", Pearson Education, Asia, 2005.

Prem Kumar Gupta, D.S. Hira, "Operations Research", S.Chand & Company Ltd, New Delhi, 3<sup>rd</sup> Edition , 2003.

## **DMC 1943 OBJECT ORIENTED ANALYSIS AND DESIGN**

### **UNIT I INTRODUCTION**

An overview – Object basics – Object state and properties – Behavior – Methods – Messages – Information hiding – Class hierarchy – Relationships – Associations – Aggregations- Identity – Dynamic binding – Persistence – Metaclasses – Object oriented system development life cycle.

### **UNIT II METHODOLOGY AND UML**

Introduction – Survey – Rumbaugh, Booch, Jacobson methods – Patterns – Frameworks – Unified approach – Unified modeling language – Static and Dynamic models – UML diagrams – Class diagram – Usecase diagrams – Dynamic modeling – Model organization – Extensibility.

### **UNIT III OBJECT ORIENTED ANALYSIS**

Identifying Usecase – Business object analysis – Usecase driven object oriented analysis – Usecase model – Documentation – Classification – Identifying object, relationships, attributes, methods – Super-sub class – A part of relationships  
Identifying attributes and methods – Object responsibility

### **UNIT IV OBJECT ORIENTED DESIGN**

Design process – Axioms – Colollaries – Designing classes – Class visibility – Refining attributes – Methods and protocols – Object storage and object interoperability – Databases – Object relational systems – Designing interface objects – Macro and Micro level processes – The purpose of a view layer interface

### **UNIT V SOFTWARE QUALITY**

Quality assurance – Testing strategies – Object orientation testing – Test cases – Test Plan – Debugging principles – Usability – Satisfaction – Usability testing – Satisfaction testing

### **TEXT BOOKS**

1. Ali Bahrami, "Object Oriented System Development", McGraw Hill International Edition, 1999.

### **REFERENCES**

1. Craig Larman, Applying UML and Patterns, 2<sup>nd</sup> Edition, Pearson, 2002.
2. Grady Booch, James Rumbaugh, Ivar Jacobson, "The Unified Modeling Language User Guide", Addison Wesley Long man, 1999.
3. Bernd Bruegge, Allen H. Dutoit, Object Oriented Software Engineering using UML, Patterns and Java, Pearson 2004

## **DMC 1944 VISUAL PROGRAMMING**

### **UNIT I WINDOWS PROGRAMMING**

The windows programming Model – Event driven programming – GUI concepts – Overview of Windows programming – Creating and displaying the window – Message Loop – windows procedure – WM\_PAINT message – WM\_DESTROY message – Data types – Resources – An Introduction to GDI – Device context – Text output – Scroll Bars – Keyboard – Mouse – Menus.

### **UNIT II VISUAL BASIC PROGRAMMING**

Visual Basic Applications – Form and properties – Variables and Constants – Variant type – Procedure scope – Main – Control statements – control arrays – Creating and using Controls – Menus and Dialogs – Programming fundamentals – Objects and instances – Debugging – Responding to mouse events – Drag and Drag drop events Responding to keyboard events – keypress, keyup, keydown events – Using grid control – Graphics controls – shape and line control – File system controls – Common dialog controls – Processing files – Accessing databases with the data controls.

### **UNIT III VISUAL C++ PROGRAMMING**

Visual C++ components – Introduction to Microsoft Foundation Classes Library – Getting started with AppWizard – Class Wizard – Event handling – Keyboard and Mouse events - WM\_SIZE, WM\_CHAR messages - Graphics Device Interface - Pen, Brush, Colors, Fonts - Single and Multiple document interface - Reading and Writing documents - Resources – Bitmaps creation, usage of BMP and displaying a file existing as a BMP.

### **UNIT IV CONTROLS**

Dialog Based Applications, controls – Animate control, image list, CRect tracker – Tree control – CtabControl – Dynamic controls – slider control – progress control – Inheriting CTreeView – CRicheditView – Modal Dialog, – Modeless Dialog – CColorDialog – CFileDialog.

### **UNIT V ADVANCED CONCEPTS**

Domain Name System – Email – World Wide Web (HTTP) – Simple Status bars – Splitter windows and multiple views – Dynamic Link Library – Data base Management with ODBC – TCP/IP – Winsock and WinInet, – ActiveX control – creation and usage – Container class.

### **TEXT BOOKS:**

1. Charles Petzold, "Windows Programming", Microsoft press, 1996.
2. J. David Kruglirski, "Programming Microsoft Visual C++", Fifth Edition, Microsoft press, 1998.
3. Marion Cottingham "Visual Basic", Peachpit Press, 1999.

### **REFERENCES:**

1. Steve Holzner, "Visual C++ 6 programming", Wiley Dreamtech India Private Ltd., 2003.
2. Kate Gregory "Using Visual C++", Prentice Hall of India Pvt., Ltd., 1999.
3. Herbert Sheildt, "MFC from the Ground Up".
4. Deitel , " Visual Basic 6.0 How To Program", Pearson Education, 1999.

## **DMC 1945 MIDDLEWARE TECHNOLOGIES**

### **1. CLIENT / SERVER CONCEPTS**

Client – Server – File Server, Database server, Group server, Object server, Web server .Middleware – General middleware – Service specific middleware. Client / Server Building blocks – RPC – Messaging – Peer – to- Peer.

### **2. EJB ARCHITECTURE**

EJB – EJB Architecture – Overview of EJB software architecture – View of EJB – Conversation – Building and Deploying EJBs – Roles in EJB.

### **3. EJB APPLICATIONS**

EJB Session Beans – EJB entity beans – EJB clients – EJB Deployment – Building an application with EJB.

### **4. CORBA**

CORBA – Distributed Systems – Purpose - Exploring CORBA alternatives – Architecture overview – CORBA and networking model – CORBA object model – IDL – ORB - Building an application with CORBA.

### **5. COM**

COM – Data types – Interfaces – Proxy and Stub – Marshalling – Implementing Server / Client – Interface Pointers – Object Creation, Invocation , Destruction – Comparison COM and CORBA – Introduction to .NET – Overview of .NET architecture – Marshalling - Remoting.

## **TEXT BOOKS**

1. Robert Orfali, Dan Harkey and Jeri Edwards, “The Essential Client/Server Survival Guide”, Galgotia Publications Pvt. Ltd., 2002. (Unit 1)
2. Tom Valesky, “Enterprise Java Beans”, Pearson Education, 2002.(Unit 2 & 3)
3. Jason Pritchard, “COM and CORBA side by side”, Addison Wesley, 2000 (Unit 4 & 5)
4. Jesse Liberty, “Programming C#”, 2<sup>nd</sup> Edition, O’Reilly Press, 2002. (Unit 5)

## **REFERENCES**

1. Mowbray, “Inside CORBA”, Pearson Education, 2002.
2. Jeremy Rosenberger, “Teach yourself CORBA in 14 days”, Tec media, 2000.

## **DMC 1946 NETWORK PROGRAMMING LAB**

1. Socket Programming
  - a. TCP Sockets
  - b. UDP Sockets
  - c. Applications using Sockets
2. Simulation of Sliding Window Protocol
3. Simulation of Routing Protocols
4. RPC
5. Development of applications such as DNS/ HTTP/ E – mail/ Multi - user Chat

## **DMC 1947 VISUAL PROGRAMMING LAB**

### **VB**

1. Form Design – Keyboard & Mouse events
2. Programs on usage of data types - variant, Control arrays
3. Simple applications using file system controls
4. Database applications using data control.

### **VC++**

SDK type programs for creating simple windows with different window styles

SDK type programs code for keyboard and mouse events, GDI objects.

Simple Dialog Based application – eg. Calculator, interest computation, money conversions, etc.

Creating SDI & MDI applications, Modal and Modeless dialog.

Programming for reading and writing into documents.

Coding Dynamic controls – slider control, progress control, inheriting CtreeView and CricheditView.

Creating static and dynamic splitter windows

Creating DLLs and using them.

Winsock and WinInet & Internet Explorer common controls.

Data access through ODBC – Cdatabase, Crecordset.

Creating ActiveX control and using it.

## **SEMESTER V**

### **DMC 1951 XML AND WEB SERVICES**

#### **1. INTRODUCTION**

Role Of XML – XML and The Web – XML Language Basics – SOAP – Web Services – Revolutions Of XML – Service Oriented Architecture (SOA).

#### **2. XML TECHNOLOGY**

XML – Name Spaces – Structuring With Schemas and DTD – Presentation Techniques – Transformation – XML Infrastructure.

#### **3. SOAP**

Overview Of SOAP – HTTP – XML-RPC – SOAP: Protocol – Message Structure – Intermediaries – Actors – Design Patterns And Faults – SOAP With Attachments.

#### **4. WEB SERVICES**

Overview – Architecture – Key Technologies - UDDI – WSDL – ebXML – SOAP And Web Services In E-Com – Overview Of .NET And J2EE.

#### **5. XML SECURITY**

Security Overview – Canonicalization – XML Security Framework – XML Encryption – XML Digital Signature – XKMS Structure – Guidelines For Signing XML Documents – XML In Practice.

#### **TEXT BOOKS**

1. Frank. P. Coyle, "XML, Web Services And The Data Revolution", Pearson Education, 2002.

#### **REFERENCES**

1. Ramesh Nagappan , Robert Skoczylas and Rima Patel Sriganesh, " Developing Java Web Services", Wiley Publishing Inc., 2004.
2. Sandeep Chatterjee, James Webber, "Developing Enterprise Web Services", Pearson Education, 2004.
3. McGovern, et al., "Java Web Services Architecture", Morgan Kaufmann Publishers,2005.
4. Publishers,2005.

## **DMC 1952 SOFTWARE PROJECT MANAGEMENT**

### **UNIT I INTRODUCTION TO SOFTWARE PROJECT MANAGEMENT**

Project Definition – Contract Management – Activities Covered By Software Project Management – Overview Of Project Planning – Stepwise Project Planning.

### **UNIT II PROJECT EVALUATION**

Strategic Assessment – Technical Assessment – Cost Benefit Analysis – Cash Flow Forecasting – Cost Benefit Evaluation Techniques – Risk Evaluation.

### **UNIT III ACTIVITY PLANNING**

Objectives – Project Schedule – Sequencing And Scheduling Activities – Network Planning Models – Forward Pass – Backward Pass – Activity Float – Shortening Project Duration – Activity On Arrow Networks – Risk Management – Nature Of Risk – Types Of Risk – Managing Risk – Hazard Identification – Hazard Analysis – Risk Planning And Control.

### **UNIT IV MONITORING AND CONTROL**

Creating Framework – Collecting The Data – Visualizing Progress – Cost Monitoring – Earned Value – Prioritizing Monitoring – Getting Project Back To Target – Change Control – Managing Contracts – Introduction – Types Of Contract – Stages In Contract Placement – Typical Terms Of A Contract – Contract Management – Acceptance.

### **UNIT V MANAGING PEOPLE AND ORGANIZING TEAMS**

Introduction – Understanding Behavior – Organizational Behaviour: A Background – Selecting The Right Person For The Job – Instruction In The Best Methods – Motivation – The Oldman–Hackman Job Characteristics Model – Working In Groups – Becoming A Team – Decision Making – Leadership – Organizational Structures – Stress – Health And Safety – Case Studies.

### **REFERENCES:**

1. Bob Hughes and MikeCotterell “Software Project Management”, Third Edition, TATA McGraw Hill Edition 2004.
2. Ramesh, Gopaldaswamy: "Managing Global Projects ", Tata McGraw Hill, 2001.
3. Royce.” Software Project Theory”, Pearson Education, 1999.
4. P.Jalote “Software Project Management In Practice”, Pearson Education, 2000.

### **DMC 1953 XML AND WEB SERVICES LAB**

1. Create an XML file for any domain with multiple sublevel complexity.  
( Example: Students data, Employee information, Product details etc..)
2. Create a DTD and XML schema for the XML file.
3. Tabulate the xml content using XSL.
4. Validate a XML file using java script with XMLDOM.
5. Write a java program to parse an XML file using DOM.
6. Write a java program to parse an XML file using SAX.
7. Write a program to implement XML – RPC.
8. Write a program to implement a web service using java.
9. Write a program to implement a web service using .NET.

### **DMC 1954 SOFTWARE DEVELOPMENT LAB**

Apply the following to typical application problems:

1. Project Planning
2. Software Requirement Analysis
3. Software Estimation
4. Software Design
5. Data Modelling & Implementation
6. Software Testing
7. Software Debugging

A possible set of applications may be the following:

- a. Library System
- b. Student Marks Analyzing System
- c. Text Editor.
- d. Create a dictionary.
- e. Telephone dictionary.
- f. Simulator Software for Parallel Processing Operation.
- g. Inventory System.



**LIST OF ELECTIVES  
M.C.A (MASTER OF COMPUTER APPLICATIONS)**

**DMC 1971 ADVANCED DATABASES**

**1. RELATIONAL DATABASES**

Relational Model - Querying - Storage Structures - Query Processing - Normalization.

**2. OBJECT ORIENTED DATABASES**

Introduction to Object Oriented Data Bases - Approaches - Modeling and Design - Persistence - Transaction - Concurrency - Recovery - Database Administration.

**3. EMERGING SYSTEMS**

Enhanced Data Models - Client/Server Model - Data Warehousing and Data Mining - Web Databases – Mobile Databases.

**4. CURRENT ISSUES**

Rules - Knowledge Bases - Active and Deductive Databases - Distributed Databases and Parallel databases.

**5. DATABASE DESIGN ISSUES**

Security - Integrity - Consistency - Database Tuning - Optimization and Research Issues.

**TEXT BOOK**

1. R. Elmasri and S.B. Navathe, "Fundamentals of Database Systems", Addison Wesley, 2000.

**REFERENCES**

1. Gary W. Hanson and James V. Hanson, "Database Management and Design", Prentice Hall of India Pvt Ltd, 1999.
2. Alex Benson, Stephen Smith and Kurt Thearling, "Building Data Mining Applications for CRM", Tata McGraw-Hill, 2000.

## **DMC 1972 TCP/IP PROTOCOL SUITE**

### **1. INTRODUCTION**

Standards – Internet – History- OSI model – Protocol suite – Addressing – Transmission media – Local Area and Wide Area Networks – Switching – Connecting devices – IP addressing

### **2. INTERNET PROTOCOL**

Subnetting – Supernetting – IP packets – Delivery – Routing – Routing model – Routing table – Datagram – Fragmentation – Checksum – IP Design – ARP – RARP – Internet control message protocol – Internet group management protocol

### **3. TRANSMISSION CONTROL PROTOCOL**

User Datagram protocol – UDP operation – Use – UDP design – TCP services – Flow control – Error control – TCP operation and design – connection – Transition diagram – Congestion control

### **4. APPLICATION LAYER AND CLIENT SERVER MODEL**

Concurrency – BOOTP – DHCP – Domain name system – Name space – Distribution – Resolution – Messages – Telnet – Rlogin – Network Virtual Terminal – Character Set – Controlling the server – Remote login

### **5. APPLICATION PROTOCOLS**

File Transfer Protocol – Connections – Communication – Simple Mail Transfer Protocol – Simple Network Management Protocol – Hyper Text Transfer Protocol – Transaction – Request and Response messages

## **TEXT BOOK**

1. Behrouz A. Forouzan, "TCP/IP Protocol Suite", Tata McGraw Hill Edition 2000.

## **REFERENCE**

1. Douglas E. Comer, David L. Stevens, "Internetworking with TCP/IP – Volume I, II and III", Prentice-Hall of India Pvt. Ltd., 2<sup>nd</sup> Edition 1994

## **DMC 1973 MANAGEMENT INFORMATION SYSTEM**

### **UNIT I INTRODUCTION:**

Information system – establishing the framework – business model – information system architecture – evolution of information systems.

### **UNIT II SYSTEM DEVELOPMENT:**

Modern information system – system development life cycle – structured methodologies – designing computer based method, procedures control, designing structured programs.

### **UNIT III INFORMATION SYSTEM:**

Functional areas, Finance, marketing, production, personnel – levels, Concepts of DSS, EIS, ES – comparison, concepts and knowledge representation – managing international information system.

### **UNIT IV IMPLEMENTATION AND CONTROL:**

Testing security – coding techniques – detection of error – validation – cost benefit analysis – assessing the value and risk of information systems.

### **UNITV SYSTEM AUDIT:**

Software engineering qualities – design, production, service, software specification, software metrics, software quality assurance – systems methodology – objectives – Time and Logic, Knowledge and Human dimension – software life cycle models – verification and validation.

### **TEXT BOOK:**

1. Kenneth C. Laudon and Jane Price Laudon, Management Information Systems Managing the digital firm, Pearson Education Asia.

### **REFERENCES:**

1. Gordon B.Davis, Management Information System: Conceptual Foundations, Structure and Development, McGraw Hill, 1974.
2. Joyce J. Elam, Case series for Management Information System Silmon and Schuster, Custom Publishing 1996.
3. Steven Alter, Information system – A Management Perspective – Addison – Wesley, 1999.
4. James AN O' Brein, Management Information Systems, Tata McGraw Hill, New Delhi, 1999.
5. Turban Mc Lean, Wetherbe, Information Technology Management making connection for strategic advantage – John Wiley, 1999.
6. Ralph M.Stair and George W.Reynolds - Principles of Information Systems – A Managerial Approach Learning, 2001.

## **DMC 1974 MOBILE COMPUTING**

### **1. INTRODUCTION**

Medium Access Control : Motivation for Specialized MAC- SDMA- FDMA- TDMA- CDMA- Comparison of Access mechanisms – Tele communications : GSM- DECT- TETRA – UMTS- IMT-200 – Satellite Systems: Basics- Routing- Localization- Handover- Broadcast Systems: Overview – Cyclic Repetition of Data- Digital Audio Broadcasting – Digital Video Broadcasting

### **2. WIRELESS NETWORKS**

Wireless LAN: Infrared Vs Radio Transmission – Infrastructure Networks- Ad hoc Networks- IEEE 802.11 – HIPERLAN – Bluetooth- Wireless ATM: Working Group- Services- Reference Model – Functions – Radio Access Layer – Handover- Location Management- Addressing Mobile Quality of Service- Access Point Control Protocol

### **3. MOBILE NETWORK LAYER**

Mobile IP : Goals – Assumptions and Requirement – Entities – IP packet Delivery- Agent Advertisement and Discovery – Registration – Tunneling and Encapsulation – Optimization – Reverse Tunneling – IPv6 – DHCP- Ad hoc Networks

### **4. MOBILE TRANSPORT LAYER**

Traditional TCP- Indirect TCP- Snooping TCP- Mobile TCP- Fast retransmit/ Fast Recovery- Transmission/ Timeout Freezing – Selective Retransmission- Transaction Oriented TCP

### **5. WAP**

Architecture – Datagram Protocol- Transport Layer Security- Transaction Protocol- Session Protocol- Application Environment-Wireless Telephony Application

### **TEXT BOOK**

1. J.Schiller, “Mobile Communication”, Addison Wesley, 2000.

### **REFERENCE BOOKS**

1. William C.Y.Lee, “Mobile Communication Design Fundamentals”, John Wiley, 1993.
2. William Stallings, “Wireless Communication and Networks”, Pearson Education, 2003.
3. Singhal, “WAP-Wireless Application Protocol”, Pearson Education, 2003.

## **DMC 1975 SOFTWARE AGENTS**

### **1. AGENT AND USER EXPERIENCE**

Interacting with Agents - Agent From Direct Manipulation to Delegation - Interface Agent Metaphor with Character - Designing Agents - Direct Manipulation versus Agent Path to Predictable

### **2. AGENTS FOR LEARNING IN INTELLIGENT ASSISTANCE**

Agents for Information Sharing and Coordination - Agents that Reduce Work Information Overhead - Agents without Programming Language - Life like Computer character - S/W Agents for cooperative Learning - Architecture of Intelligent Agents

### **3. AGENT COMMUNICATION AND COLLABORATION**

Overview of Agent Oriented Programming - Agent Communication Language - Agent Based Framework of Interoperability

### **4. AGENT ARCHITECTURE**

Agents for Information Gathering - Open Agent Architecture - Communicative Action for Artificial Agent

### **5. MOBILE AGENTS**

Mobile Agent Paradigm - Mobile Agent Concepts - Mobile Agent Technology - Case Study: Tele Script, Agent Tel

### **TEXT BOOKS**

1. Jeffrey M. Bradshaw, " Software Agents ", MIT Press, 2000. (Unit 1,2,3 & 4)
2. William R. Cockayne, Michael Zyda, "Mobile Agents", Prentice Hall, 1998 (5<sup>th</sup> Unit)

### **REFERENCES**

1. Russel & Norvig, " Artificial Intelligence: A Modern Approach ", Prentice Hall, 2<sup>nd</sup> Edition, 2002
2. Joseph P. Bigus & Jennifer Bigus, "Constructing Intelligent agents with Java: A Programmer's Guide to Smarter Applications ", Wiley, 1997.

## **DMC 1976 HUMAN RESOURCE MANAGEMENT**

### **UNIT I PERSPECTIVES IN HUMAN RESOURCE MANAGEMENT**

Evolution of human resource management – the importance of the human factor – objectives of human resource management – role of human resource manager – human resource policies – computer applications in human resource management.

### **UNIT II THE CONCEPT OF BEST FIT EMPLOYEE**

Importance of human resource planning – forecasting human resource requirement – internal and external sources. Selection process-screening – tests - validation – interview - medical examination – recruitment introduction – importance – practices – socialization benefits.

### **UNIT III TRAINING AND EXECUTIVE DEVELOPMENT**

Types of training, methods, purpose, benefits and resistance. Executive development programmes – common practices - benefits – self development – knowledge management.

### **UNIT IV SUSTAINING EMPLOYEE INTEREST**

Compensation plan – reward – motivation – theories of motivation – career management – development, mentor – protege relationships.

### **UNIT V PERFORMANCE EVALUATION AND CONTROL PROCESS**

Method of performance evaluation – feedback – industry practices. Promotion, demotion, transfer and separation – implication of job change. The control process – importance – methods – requirement of effective control systems grievances – causes – implications – redressal methods.

#### **TEXT BOOKS:**

1. Decenzo and Robbins, Human Resource Management, Wilsey, 6<sup>th</sup> edition, 2001.
2. Biswajeet Pattanayak, Human Resource Management, Prentice Hall of India, 2001.

#### **REFERENCES:**

1. Human Resource Management, Eugence Mckenna and Nic Beach, Pearson Education Limited, 2002.
2. Dessler Human Resource Management, Pearson Education Limited, 2002.
3. Mamoria C.B. and Mamoria S. Personnel Management, Himalaya Publishing Company, 1997.
4. Wayne Cascio, Managing Human Resource, McGraw Hill, 1998.
5. Ivancevich, Human Resource Management, McGraw Hill 2002.

## **DMC 1977 INFORMATION SECURITY**

### **1. INTRODUCTION**

History, Critical Characteristics of Information, NSTISSC Security Model, Components of an Information System, Securing the Components, Balancing Security and Access, The SDLC, The Security SDLC, Need for Security, Business Needs, Threats, Attacks, Legal, Ethical and Professional Issues.

### **2. SECURITY ANALYSIS**

Risk Management : Identifying and Assessing Risk, Assessing and Controlling Risk.

### **3. LOGICAL DESIGN**

Blueprint for Security, Information Security Policy, Standards and Practices, ISO 17799/BS 7799, NIST Models, VISA International Security Model, Design of Security Architecture, Planning for Continuity

### **4. PHYSICAL DESIGN**

Security Technology, IDS, Scanning and Analysis Tools

### **5. NETWORK AND COMPUTER SECURITY**

Cryptography, Access Control Devices, Physical Security, Security and Personnel

### **TEXT BOOKS**

1. Michael E Whitman and Herbert J Mattord, "Principles of Information Security", Vikas Publishing House, New Delhi, 2003.
2. Ron Weber, "Information Systems Control and Audit", Pearson Education, New Delhi, 2004.

### **REFERENCES**

1. Micki Krause, Harold F. Tipton, " Handbook of Information Security Management", Vol 1-3 CRC Press LLC, 2004.
2. Stuart Mc Clure, Joel Scrambray, George Kurtz, "Hacking Exposed", Tata McGraw Hill, 2003.
3. Matt Bishop, " Computer Security Art and Science", Pearson/PHI, 2002.

## **DMC 1978 INTRODUCTION TO E-LEARNING**

### **1. INTRODUCTION**

Definition – Benefits – Challenges & opportunities – ROI metrics & evaluation – E-Learning cycle – Learning strategy – Business drivers – E-learning strategy.

### **2. DESIGN AND IMPLEMENTATION**

Role of tutor – Instructional design – Design issues – Types of learning engagements – Blended learning – Team – Infra structure – Vendor relationships – Learning management systems – Testing.

### **3. DELIVERY**

Multi-channel delivery – Learner support – Developing curriculum – E-learning standards – Instructional design – Content development process – Case studies – Future directions

### **4. WEB BASED TRAINING**

Definition – Need for WBT – Choosing an approach - Kind of courses – Technical standards – Metaphors – Course framework – registration – Running the course – resources – Feedback – Access.

### **5. LEARNING METHODOLOGY**

Organizing learning sequences – Common lesson structures – Creating building blocks – Designing learning sequences – Learning activities – Test and exercise learning – Planning tests – Selecting questions – Sequencing test questions – Feedback – Improve testing – Prevent cheating.

### **TEXT BOOKS**

1. John Gardner, Bryn Holmes, "E-Learning: Concepts and Practice", SAGE Publications Ltd, 2006.
2. Don Morrison, "E-learning Strategies: How to get Implementation and Delivery Right First Time", John Wiley and Sons Ltd, 2003.
3. William Horton, "Web-Based Training", John Wiley & Sons Inc, 2000.

### **REFERENCE**

1. M W Allen, "Michael Allen's Guide to E-learning: Building Interactive, Fun and Effective Learning Program for any Company", John Wiley & Sons Inc, 2003.
2. Marc J Rosenberg, "E-Learning: Strategies for Delivering Knowledge in the Digital Age", McGraw-Hill Education, 2000.
3. Brandon Hall, "Web-Based Training Cookbook", John Wiley & Sons, 1997.



## **DMC 1979 HEALTH CARE INFORMATION SYSTEMS**

### **1. INTRODUCTION**

Introduction to health care information – Health care data quality – Health care information regulations, laws and standards.

### **2. HEALTH CARE INFORMATION SYSTEMS**

History and evolution of health care information systems – Current and emerging use of clinical information systems – system acquisition – System implementation and support.

### **3. INFORMATION TECHNOLOGY**

Information architecture and technologies that support health care information systems – Health care information system standards – Security of health care information systems.

### **4. MANAGEMENT OF IT CHALLENGES**

Organizing information technology services – IT alignment and strategic planning – IT governance and management.

### **5. IT INITIATIVES**

Management's role in major IT initiatives – Assessing and achieving value in health care information systems.

### **TEXT BOOK**

1. Karen A Wager, Frances Wickham Lee, John P Glaser, “ Managing Health Care Information Systems: A Practical Approach for Health Care Executives”, Jossey-Bass/Wiley, 2005.

### **REFERENCE**

1. Rudi Van De Velde and Patrice Degoulet, “Clinical Information Systems: A Component based approach”, Springer 2005.

## **DMC 1980 ELECTRONIC COMMERCE**

### **1. INTRODUCTION**

Networks and Commercial Transactions - Internet and Other Novelties - Electronic Transactions Today - Commercial Transactions - Establishing Trust - Internet Environment - Internet Advantage - World Wide Web.

### **2. SECURITY TECHNOLOGIES**

Why Internet Is Insecure - Internet Security Holes - Cryptography : Objective - Codes and Ciphers - Breaking Encryption Schemes - Data Encryption Standard - Trusted Key Distribution and Verification - Cryptographic Applications - Encryption - Digital Signature - Nonrepudiation and Message Integrity.

### **3. ELECTRONIC PAYMENT METHODS**

Traditional Transactions : Updating - Offline and Online Transactions - Secure Web Servers - Required Facilities - Digital Currencies and Payment Systems - Protocols for the Public Transport - Security Protocols - SET - Credit Card Business Basics.

### **4. ELECTRONIC COMMERCE PROVIDERS**

Online Commerce Options - Functions and Features - Payment Systems : Electronic, Digital and Virtual Internet Payment System - Account Setup and Costs - Virtual Transaction Process - InfoHaus - Security Considerations - CyberCash: Model - Security - Customer Protection - Client Application - Selling through CyberCash.

### **5. ONLINE COMMERCE ENVIRONMENTS**

Servers and Commercial Environments - Payment Methods - Server Market Orientation - Netscape Commerce Server - Microsoft Internet Servers - Digital Currencies - DigiCash - Using Ecash - Ecash Client Software and Implementation - Smart Cards - The Chip - Electronic Data Interchange - Internet Strategies, Techniques and Tools.

### **TEXT BOOK**

1. Pete Loshin, "Electronic Commerce", 4<sup>th</sup> Edition, Firewall media, An imprint of laxmi publications Pvt. Ltd., New Delhi, 2004.

### **REFERENCES**

1. Jeffrey F. Rayport and Bernard J. Jaworski, "Introduction to E-Commerce", 2<sup>nd</sup> Edition, Tata Mc-Graw Hill Pvt., Ltd., 2003.
2. Greenstein, "Electronic Commerce", Tata Mc-Graw Hill Pvt., Ltd., 2000.

## **DMC 1981 INSTRUCTIONAL DESIGN FOR E-LEARNING**

### **1.INTRODUCTION**

E-learning – Types – Foundations – Problem based Approach to designing E-Learning – Design E-learning – Design and curriculum strategies – Story telling and contextual based design strategies – Blended learning and curriculum design – Informal learning.

### **2. PRINCIPLES OF E-LEARNING**

Philosophy of education – Theory of learning – Applying principles of multimedia – Applying principles of contiguity – Applying principles of modality – Applying principles of redundancy – Applying principles of coherency – Applying principles of personalization.

### **3. HIGH LEVEL DESIGN**

Simulations – e-Monitoring and e-Coaching – m-Learning – Live virtual classroom.

### **4. DETAIL DESIGN STRATEGIES**

Openings and closings – Exposition techniques for writing e-learning content – Interaction – Visual communication techniques.

### **5. TECHNIQUES**

Leveraging examples in E-learning – Collaborative E-learning – Learner control in E-learning – E-Learning and problem solving skills – Applying guidelines.

### **TEXT BOOKS**

1. R C Clark and R E Mayer, "E-Learning and the Science of Instruction", Pfeiffer Wiley, 2003.
2. Driscoll, "Advanced Web-based Training Strategies: Unlocking Instructionally-Sound Online Learning", Pfeiffer Wiley, 2005.

### **REFERENCE**

1. William Horton, "E-Learning by Design", Pfeiffer Wiley, 2006.
2. Robin Mason, "E-Learning: the key concepts", Routledge, New Ed Edition, 2006.

## **DMC 1982 KNOWLEDGE MANAGEMENT**

### **UNIT I - INTRODUCTION**

Knowledge Economy – Technology and Knowledge Management – Knowledge Management Matrix – Knowledge Management Strategy – Prioritizing knowledge strategies – knowledge as a strategic asset.

### **UNIT II - KNOWLEDGE ACQUISITION AND PROCESSING**

Knowledge Attributes – Fundamentals of knowledge formation – Tacit and Explicit knowledge – Knowledge sourcing, abstraction, conversion and diffusion.

### **UNIT III - KNOWLEDGE MANAGEMENT SYSTEMS**

Knowledge Management and organizational learning, architecture – important considerations – collection and codification of knowledge – Repositories, structure and life cycle – Knowledge Management infrastructure – Knowledge Management applications – Collaborative platforms.

### **UNIT IV - KNOWLEDGE CULTURE IN ORGANISATIONS**

Developing and sustaining knowledge culture – Knowledge culture enablers – implementing knowledge culture enhancement programs – Communities of practice – Developing organizational memory.

### **UNIT V - KNOWLEDGE MANAGEMENT – LOOKING AHEAD**

Knowledge Management tools, techniques – Knowledge Management and measurements – Knowledge audit – Knowledge careers – Practical implementation of Knowledge management systems – Case studies.

### **REFERENCES**

1. Key issues in the New Knowledge Management –Joseph M. Firestone and Mark W. McElroy, Butterworth – Hienemann.
2. Knowledge Management – Classic and contemporary works Edited by Daryl Morey & others Universities Press India Private Limited.
3. Knowledge Management, Shelda Debowski, John Wiley & Sons.
4. Knowledge Management, Sudhir Warier, Vikas Publishing House Private Limited.
5. Knowledge Management System Theory and practice, Edited by Stewart Barnes Thomson Learning.
6. Handbook on knowledge management, Edited by CW. Hol Sapple Springer.

## **DMC1983 WEB GRAPHICS**

### **1. INTRODUCTION**

HTML coding - Basic web graphics - Web page design and site building - Image maps - Adding multimedia to the web.

### **2. PAINT SHOP PRO/PHOTOSHOP**

Introduction - Image Basics - File Formats - GIF - JPEG - Color Palette - Layers - Creating new Images - Brushes - Grids - Scaling Images - Moving and Merging Layers - Tool Palette - Screen capturing - Grey styling - Using style Palette - Animation.

### **3. IMAGE HANDLING**

Scanning Images - Adding Text to the images - Designing icons - Creating background images - Color models - Color depths - Color calibration - Creating gradients - Oil paint effect.

### **4. MULTIMEDIA**

Creating clippings - Animations with sound effects - Adding audio or Video - Windows Media Player ActiveX Control - Agent control - Embedding VRML in a web page - Real Player ActiveX control.

### **5. APPLICATIONS**

Creating web site with a particular theme using all the utilities - Graphics - Animations and Interaction.

### **TEXT BOOKS**

1. Richard Schrand, "Photoshop 6 Visual Jumpstrat", Adobe Press, 2000. (Unit 1,2 & 3)
2. James L. Mohles, "Flash 5.0 Graphics, Animation & Interaction", Macromedia 2000. (Unit 4 & 5)

### **REFERENCES**

1. Deitel, "Internet and World Wide Web How to program", Prentice Hall 2003.
2. Robert Reinhardt, Jon Warren Lentz , "Flash 5 Bible", Hungry Minds Inc, 2001.

## **DMC1984 E-LEARNING TECHNOLOGY**

### **1. INTRODUCTION**

Using Dreamweaver for e-learning – Advantages – Disadvantages – Other web technologies – Course binder – Possibilities – Installation – Basics – Getting started – Multiple choice & time/false interaction.

### **2. ADVANCED INTERACTION**

Explore interaction – Button interaction – Text interaction – Timer interaction – Slider interaction – Global interaction enhancements.

### **3. EXTENDING COURSE BUILDERS**

Using custom - style sheet to enhance CB – Action manager – Overview – Customizing action manager tab – action management object – crating custom – course builder interactions – deciphering- CB java script.

### **4. LEARNING SITE**

Introduction to learning site – Possibilities – Installation - Designing a learning site – Customizing a learning site.

### **5. TRACKING LEARNER DATE**

Learning site for tracking – Learning site database – Tracking and scoring issues – Setting up data tracking – Enhancements – Communicating with learning management system.

### **TEXT BOOKS**

1. Gain Hess & Steven Hancock, “ Using Dreamweaver MX to create E-Learning : A Comprehensive Guide to Course Builder and Learning sites”, Rapid Intake Press, 2004.
2. Michael Doyle, “Macromedia Dreamweaver E-learning Tool-kit: Building Web-based Traning with Course builder”, 2003.

### **REFERENCE**

1. Marc L Rosenberg, “Beyond E-Learning: Approaches and Technologies to Enhance Organizational Knowledge, Learning and Performance”, Pfeiffer Wiley, 2006.
2. Besty Bruce, “E-learning with Dreamweaver MX: Building online Learning Applications”, Peachpit Press, 2002.

## **DMC 1985 DATA WAREHOUSING AND DATA MINING**

### **1. INTRODUCTION**

Relation To Statistics, Databases- Data Mining Functionalities-Steps In Data Mining Process-Architecture Of A Typical Data Mining Systems- Classification Of Data Mining Systems - Overview Of Data Mining Techniques.

### **2. DATA PREPROCESSING AND ASSOCIATION RULES**

Data Preprocessing-Data Cleaning, Integration, Transformation, Reduction, Discretization Concept Hierarchies-Concept Description: Data Generalization And Summarization Based Characterization- Mining Association Rules In Large Databases.

### **3. PREDICTIVE MODELING**

Classification And Prediction: Issues Regarding Classification And Prediction- Classification By Decision Tree Induction-Bayesian Classification-Other Classification Methods-Prediction-Clusters Analysis: Types Of Data In Cluster Analysis- Categorization Of Major Clustering Methods: Partitioning Methods – Hierarchical Methods

### **4. DATA WAREHOUSING**

Data Warehousing Components -Multi Dimensional Data Model- Data Warehouse Architecture-Data Warehouse Implementation- -Mapping the Data Warehouse to Multiprocessor Architecture- OLAP.-Need- Categorization of OLAP Tools.

### **5. APPLICATIONS**

Applications of Data Mining-Social Impacts Of Data Mining-Tools-An Introduction To DB Miner-Case Studies-Mining WWW-Mining Text Database-Mining Spatial Databases.

### **TEXT BOOK**

1. Jiawei Han, Micheline Kamber, "Data Mining: Concepts and Techniques", Morgan Kaufmann Publishers, 2002.

### **REFERENCES**

1. Alex Berson, Stephen J. Smith, "Data Warehousing, Data Mining, & OLAP", Tata McGraw- Hill, 2004.
2. Usama M. Fayyad, Gregory Piatetsky - Shapiro, Padhrai Smyth And Ramasamy Uthurusamy, "Advances In Knowledge Discovery And Data Mining", The M.I.T Press, 1996.
3. Ralph Kimball, "The Data Warehouse Life Cycle Toolkit", John Wiley & Sons Inc., 1998.
4. Sean Kelly, "Data Warehousing In Action", John Wiley & Sons Inc., 1997.