### SEMESTER I

<table>
<thead>
<tr>
<th>CODE NO.</th>
<th>COURSE TITLE</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEORY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC1911</td>
<td>Computer Organization</td>
<td>100</td>
</tr>
<tr>
<td>DMC1912</td>
<td>Problem Solving Programming</td>
<td>100</td>
</tr>
<tr>
<td>DMC1913</td>
<td>Database Management System</td>
<td>100</td>
</tr>
<tr>
<td>DMC1914</td>
<td>Data Structure</td>
<td>100</td>
</tr>
<tr>
<td>DMC1915</td>
<td>Accounting and Financial Management</td>
<td>100</td>
</tr>
<tr>
<td>PRACTICAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC1916</td>
<td>Programming and Data Structure Lab</td>
<td>100</td>
</tr>
<tr>
<td>DMC1917</td>
<td>Database Management System Lab</td>
<td>100</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>700</td>
</tr>
</tbody>
</table>

### SEMESTER II

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC 1921</td>
<td>Mathematical Foundations of Computer Science</td>
<td>100</td>
</tr>
<tr>
<td>DMC 1922</td>
<td>Object Oriented Programming</td>
<td>100</td>
</tr>
<tr>
<td>DMC 1923</td>
<td>Software Engineering</td>
<td>100</td>
</tr>
<tr>
<td>DMC 1924</td>
<td>System Software</td>
<td>100</td>
</tr>
<tr>
<td>DMC 1925</td>
<td>Operating System</td>
<td>100</td>
</tr>
<tr>
<td>DBA 1605</td>
<td>Communication Skills</td>
<td>100</td>
</tr>
<tr>
<td>Practical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC1926</td>
<td>Object Oriented Programming Lab</td>
<td>100</td>
</tr>
<tr>
<td>DMC1927</td>
<td>System Software Lab</td>
<td>100</td>
</tr>
</tbody>
</table>

### SEMESTER III

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC1931</td>
<td>Computer Networks</td>
<td>100</td>
</tr>
<tr>
<td>DMC1932</td>
<td>Microprocessors and its Applications</td>
<td>100</td>
</tr>
<tr>
<td>DMC1933</td>
<td>Design and Analysis of Algorithms</td>
<td>100</td>
</tr>
<tr>
<td>DMC1934</td>
<td>Computer Graphics and Multimedia Systems</td>
<td>100</td>
</tr>
<tr>
<td>DMC1935</td>
<td>Web Programming</td>
<td>100</td>
</tr>
<tr>
<td>Elective I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC1936</td>
<td>Web Programming Lab</td>
<td>100</td>
</tr>
<tr>
<td>DMC1937</td>
<td>Graphics and Multimedia Lab</td>
<td>100</td>
</tr>
</tbody>
</table>
### SEMESTER IV

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC1941</td>
<td>Unix and Network Programming</td>
<td>100</td>
</tr>
<tr>
<td>DMC1942</td>
<td>Resource Management Techniques</td>
<td>100</td>
</tr>
<tr>
<td>DMC1943</td>
<td>Object Oriented Analysis and Design</td>
<td>100</td>
</tr>
<tr>
<td>DMC1944</td>
<td>Visual Programming</td>
<td>100</td>
</tr>
<tr>
<td>DMC1945</td>
<td>Middleware Technologies</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Elective II</td>
<td></td>
</tr>
<tr>
<td>Practical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC1946</td>
<td>Network Programming Lab</td>
<td>100</td>
</tr>
<tr>
<td>DMC1947</td>
<td>Visual Programming Lab</td>
<td>100</td>
</tr>
</tbody>
</table>

### SEMESTER V

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theory</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC1951</td>
<td>XML and Web Services</td>
<td>100</td>
</tr>
<tr>
<td>DMC1952</td>
<td>Software Project Management</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Elective III</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elective IV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Elective V</td>
<td></td>
</tr>
<tr>
<td>Practical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DMC1953</td>
<td>XML and Web Services Lab</td>
<td>100</td>
</tr>
<tr>
<td>DMC1954</td>
<td>Software Development Lab</td>
<td>100</td>
</tr>
</tbody>
</table>

### SEMESTER VI

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMC1961</td>
<td>Project Work</td>
<td>400</td>
</tr>
</tbody>
</table>
### III Semester M.C.A – Elective I

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>DMC 1971</td>
<td>Advanced Databases</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>DMC 1972</td>
<td>TCP/IP Protocol Suite</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>DMC 1973</td>
<td>Management Information System</td>
<td>100</td>
</tr>
</tbody>
</table>

### IV Semester M.C.A – Elective II

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>DMC 1974</td>
<td>Mobile Computing</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>DMC 1975</td>
<td>Software Agents</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>DMC 1976</td>
<td>Human Resource Management</td>
<td>100</td>
</tr>
</tbody>
</table>

### V Semester M.C.A – Elective III

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>DMC 1977</td>
<td>Information Security</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>DMC 1978</td>
<td>Introduction to E-Learning</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>DMC 1979</td>
<td>Health Care Information System</td>
<td>100</td>
</tr>
</tbody>
</table>

### V Semester M.C.A – Elective IV

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>DMC 1980</td>
<td>Electronic Commerce</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>DMC 1981</td>
<td>Instructional Design for E-Learning</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>DMC 1982</td>
<td>Knowledge Management</td>
<td>100</td>
</tr>
</tbody>
</table>

### V Semester M.C.A – Elective V

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>DMC 1983</td>
<td>Web Graphics</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>DMC 1984</td>
<td>E-Learning Technology</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>DMC 1985</td>
<td>Data Warehousing and Data Mining</td>
<td>100</td>
</tr>
</tbody>
</table>
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

UNIT IV    INPUT – OUTPUT ORGANIZATION
Peripheral Devices – Input-Output Interface – Asynchronous Data Transfer – Modes Of

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

REFERENCES
UNIT I  INTRODUCTION TO COMPUTER PROBLEM SOLVING

UNIT II  FUNDAMENTAL ALGORITHMS

UNIT III  INTRODUCTION TO C LANGUAGE

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

TEXTBOOKS
1. R.G.Dromey “How to Solve it by Computer”, PHI, 1998

REFERENCES
1. Deitel and Deitel “C How to Program”, Addison Wesley, 2001
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, Hentry F.Korth and S.Sudharssan,"Database System
2. Raghu Ramakrishnan & Johannesgerhrke, "Data Base Management
UNIT I DATA STRUCTURES

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

UNIT IV GRAPHS AND THEIR APPLICATIONS

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

REFERENCES
UNIT I  FINANCIAL ACCOUNTING

UNIT II  ACCOUNTING

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

UNIT V  FINANCING DECISION AND WORKING CAPITAL MANAGEMENT

TEXTBOOK

REFERENCES
1. S.P.Iyengar, “Cost and Management Accounting”, Sultan Chand & Co,
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

DMC 1922 OBJECT ORIENTED PROGRAMMING

UNIT I FUNDAMENTALS


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


UNIT IV TEMPLATES


UNIT V INHERITANCE


REFERENCES:

DMC 1923 SOFTWARE ENGINEERING

UNIT I INTRODUCTION


UNIT II SOFTWARE DESIGN


UNIT III SOFTWARE METRICS


UNIT IV SOFTWARE TESTING AND MAINTENANCE


UNIT V SOFTWARE CONFIGURATION MANAGEMENT (SCM) & CASE TOOLS


REFERENCES:

UNIT I INTRODUCTION


UNIT II ASSEMBLERS


UNIT III LOADERS AND LINKERS


UNIT IV MACRO PROCESSORS


UNIT V OTHER SYSTEM SOFTWARE


TEXT BOOKS:


REFERENCES:

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


REFERENCES:

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:


REFERENCES:

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.
7. Grep, sed, awk.
8. File system related system calls.
10. Message queues.
11. Pipe, FIFO’s.
12. Signals.
13. Shared memory.
SEMESTER – III

DMC 1931   COMPUTER NETWORKS

1. INTRODUCTION


2. NETWORK FUNDAMENTALS


3. NETWORK LAYER


4. TRANSPORT LAYER

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

5. PRESENTATION LAYER and APPLICATIONS


TEXT BOOK


REFERENCES

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


UNIT V  BUILDING SYSTEMS


REFERENCES:

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 framework –
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’s 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-

REFERENCES:
1. Anany Levitin “Introduction to the Design and Analysis of Algorithms” Pearson
   Education 2003.
   algorithms” Prentice Hall 1990.
1. INTRODUCTION


2. 2D TRANSFORMATIONS

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

3. 3D TRANSFORMATIONS


4. OVERVIEW OF MULTIMEDIA


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


REFERENCES

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


UNIT III JAVA FUNDAMENTALS


UNIT IV PACKAGES


UNIT V ADVANCED JAVA PROGRAMMING


TEXT BOOK


REFERENCES

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
1. Write a C program with Fundamental Graphics Function


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.


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.
DMC1941  UNIX AND NETWORK PROGRAMMING

1. INTRODUCTION & FILE SYSTEM


2. PROCESSES


3. INTERPROCESS COMMUNICATION


4. SOCKETS


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)

REFERENCE BOOKS

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


UNIT V  QUEUEING MODELS

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

TEXT BOOKS


REFERENCES

DMC 1943  OBJECT ORIENTED ANALYSIS AND DESIGN

UNIT I  INTRODUCTION


UNIT II  METHODOLOGY AND UML


UNIT III  OBJECT ORIENTED ANALYSIS

Identifying Use case – Business object analysis – Use case driven object oriented analysis – Use case 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 – Axions – 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


TEXT BOOKS


REFERENCES

DMC 1944 VISUAL PROGRAMMING

UNIT I WINDOWS PROGRAMMING

UNIT II VISUAL BASIC PROGRAMMING

UNIT III VISUAL C++ PROGRAMMING

UNIT IV CONTROLS

UNIT V ADVANCED CONCEPTS

TEXT BOOKS:

REFERENCES:
3. Herbert Sheildt, “MFC from the Ground Up”.
DMC 1945 MIDDLEWARE TECHNOLOGIES

1. CLIENT / SERVER CONCEPTS


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


5. COM


TEXT BOOKS


REFERENCES

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


2. XML TECHNOLOGY


3. SOAP


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


TEXT BOOKS


REFERENCES

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


UNIT III ACTIVITY PLANNING


UNIT IV MONITORING AND CONTROL


UNIT V MANAGING PEOPLE AND ORGANIZING TEAMS


REFERENCES:

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 javascript 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.
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


REFERENCES

DMC 1972  TCP/IP PROTOCOL SUITE

1. INTRODUCTION
   Transmission media – Local Area and Wide Area Networks – Switching –
   Connecting devices – IP addressing

2. INTERNET PROTOCOL
   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 –
   – Character Set – Controlling the server – Remote login

5. APPLICATION PROTOCOLS
   File Transfer Protocol – Connections – Communication – Simple Mail Transfer
   Transaction – Request and Response messages

TEXT BOOK

REFERENCE
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:


UNIT V    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:


REFERENCES:

DMC 1974 MOBILE COMPUTING

1. INTRODUCTION


2. WIRELESS NETWORKS


3. MOBILE NETWORK LAYER


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


TEXT BOOK


REFERENCE BOOKS

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)

REFERENCES

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

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


UNIT V  PERFORMANCE EVALUATION AND CONTROL PROCESS


TEXT BOOKS:


REFERENCES:

DMC 1977 INFORMATION SECURITY

1. INTRODUCTION


2. SECURITY ANALYSIS


3. LOGICAL DESIGN


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


REFERENCES


DMC 1978 INTRODUCTION TO E-LEARNING

1. INTRODUCTION


2. DESIGN AND IMPLEMENTATION


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


5. LEARNING METHODOLOGY


TEXT BOOKS


REFERENCE

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


REFERENCE

DMC 1980    ELECTRONIC COMMERCE

1. INTRODUCTION


2. SECURITY TECHNOLOGIES


3. ELECTRONIC PAYMENT METHODS


4. ELECTRONIC COMMERCE PROVIDERS


5. ONLINE COMMERCE ENVIRONMENTS


TEXT BOOK


REFERENCES

DMC 1981 INSTRUCTIONAL DESIGN FOR E-LEARNING

1. INTRODUCTION


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


4. DETAIL DESIGN STRATEGIES


5. TECHNIQUES


TEXT BOOKS


REFERENCE

DMC 1982 KNOWLEDGE MANAGEMENT

UNIT I - INTRODUCTION


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


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

2. Knowledge Management – Classic and contemporary works Edited by Daryl Morey & others Universities Press India Private Limited.
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


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


REFERENCES

1. INTRODUCTION


2. ADVANCED INTERACTION


3. EXTENDING COURSE BUILDERS


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


REFERENCE

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