BHARATHIAR UNIVERSITY::COIMBATORE-641 046
B.SC., SOFTWARE SYSTEM & COMPULSORY DIPLOMA IN
MULTIMEDIA & ANIMATION
(For the students admitted from the academic year 2008-2009 and onwards)

SCHEME OF EXAMINATION - CBCS PATTERN

<table>
<thead>
<tr>
<th>Part</th>
<th>Study Components</th>
<th>Course title</th>
<th>Ins. hrs/ week</th>
<th>Dur.Hr</th>
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### Semester IV

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### Semester VI

| Core 11: Software Testing                      | 5 | 3 | 25 | 75 | 100 | 4 |
| Core 12: Computer Networks                     | 6 | 3 | 25 | 75 | 100 | 5 |
|Core Lab 6: Software Testing Lab                | 6 | 3 | 40 | 60 | 100 | 3 |
| Elective II                                    | 5 | 3 | 25 | 75 | 100 | 5 |
| Elective III                                   | 5 | 3 | 25 | 75 | 100 | 5 |
| IV  | Skill Based Subject 4 - Diploma Animation Lab | 3 | 3 | 40 | 60 | 100 | 3 |
| V   | Extension Activities @                       | - | - | 50 | -  | 50  | 1 |

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# No Continuous Internal Assessment (CIA). Only University Examinations.

| List of Elective papers (Colleges can choose any one of the paper as electives) |
|---------------------------------|----|---|---|---|---|---|
| Elective – I                   | A  | E-Commerce            |
|                                 | B  | Wireless Mobile Communications |
|                                 | C  | Distributed Computing |
| Elective – II                  | A  | Web Technology         |
|                                 | B  | Software Quality Assurance |
|                                 | C  | Software Reliability |
| Elective - III                 | A  | Data Mining            |
|                                 | B  | Component Technology   |
|                                 | C  | LAN & Trouble Shooting |

| Total                          | 3600 | 140 |
CORE 1: DATA STRUCTURES AND C PROGRAMMING

Subject Description: This subject deals with the methods of data structures using C programming language.

Goal: To learn about C programming language using data structural concepts.

Objective: On successful completion of this subject the students should have:
- Writing programming ability on data structures dealing with Stacks, Queues, List, Searching and Sorting algorithms etc.,

UNIT I:
Operators and Expressions – Formatted and Unformatted I/O functions – Decision statements – Loop control statements.

UNIT II:
Arrays – String and its standard functions. Pointers – Functions – Preprocessor directives: #define, #include, #ifndef, Predefined macros.

UNIT III:
Structure and Union: Features of structure, Declaration and initialization of structure, Structure within structure, Array of structure, Pointer to structure, Bit fields, Enumerated data types, Union. Files: Streams and file types, Steps for file operation, File I/O, Structures read and write, other file functions, Command line arguments, I/O redirection.

UNIT IV:

UNIT V:
Searching and Sorting – Searching: Linear, Binary. Sorting – Insertion, Selection, Bubble, Quick, Tree, Heap.

TEXT BOOK:

REFERENCE BOOK:
CORE 2 :DIGITAL FUNDAMENTALS AND ARCHITECTURE

Subject Description: This subject deals with fundamentals of digital computers, Microprocessors and Architecture.
Goal: To learn about computer fundamentals and its organization.
Objective: On successful completion of this subject the students should have:
- Knowledge on digital circuits
- Microprocessor architecture
- Interfacing of various components

Unit I:

Unit II:
Combinational Logic Circuits: Boolean algebra –Karnaugh map – Canonical form

Unit III:

Unit IV:

Unit V:

Text Books:

Reference Books:
2. Computer Architecture, Carter, Schaums outline series, TMH.
CORE Lab 1 : C Programming Using Data Structures

- Write a Program to Create Stack Operations.
- Write a Program to Create Queue Operations.
- Write a Program to Create Infix to Postfix Conversion.
- Write a Program to Implement Linear & Binary Search to find a Particular Name in a List of Names.
- Write a Program to Create Polynomial Addition using Single Linked Lists.
- Write a Program Using Double Linked Lists.
- Write a Program for Linked List Representation of Employee Records & maintain it with the following operations.
  - to add a new record, to delete an existing record, print the information about an employee, finding the number of employees in this structure.
- Write a Program to arrange a set of numbers in Ascending Order using Heap Sort.
- Write a Program to arrange a set of numbers in Ascending Order Using Quick Sort.
- Write a Program Using Shortest Path.
- Write a Program Using Tree Traversals.
ALLIED PAPER I:
COMPUTER ORIENTED NUMERICAL & STATISTICAL METHODS

Subject Description:
This subject deals with various numerical methods and statistical applications for computer science.

Goal:
To learn about the computer based numerical and statistical methods.

Objective:
On successful completion of this subject the students should have:
- Understanding various concepts of numerical analysis.
- Learning various applications statistical methods for Computer Science.

Unit I:

Unit II:

Unit III:

Unit IV:
Measures of central tendency – Mean, Median and mode – Relation between mean, median and mode. Dispersion – Range – Mean deviation & standard deviation.

Unit V:
Correlation – Karl Pearson’s Coefficient of Correlation – Rank correlation regression – Regression Equations- Difference between correlation & Regression

Text Book:

Reference Book:

Fundamental of Mathematical statistics S C Gupta, V. K. Kapoor Sultan Chand and Sons
CORE 3: OBJECT ORIENTED PROGRAMMING WITH C++

Subject Description: This subject deals with the programming concepts of Object Oriented Programming using C++.

Goal: To learn about Object Oriented Programming concepts.

Objective: On successful completion of this subject the students should have:
- Writing programming ability on OOPS concepts like Encapsulation, Data abstraction, Inheritance, Polymorphism and Exception handling etc.,

UNIT I:

UNIT II:
Class and Objects: Declaring objects – Defining member functions – Static member variables and functions – Array of objects – Friend functions – Overloading member functions – Bit fields and Class – Constructor and Destructors – Characteristics – Calling constructor and Destructors – Constructor and Destructor with static member.

UNIT III:
Operator Overloading: Overloading unary, Binary operators – Overloading friend functions – Type conversion - Inheritance: Types of inheritance: Single, Multilevel, Multiple, Hierarchical, Hybrid and Multi path inheritance – Virtual Base classes – Abstract Classes.

UNIT IV:
Pointers: Declaration – Pointer to class, object – THIS pointer – Pointer to derived classes and base classes – Arrays – Characteristics – Arrays of classes – Memory models – New and delete operators – Dynamic objects – Binding, Polymorphisms and Virtual functions.

UNIT V:

TEXT BOOKS

REFERENCE BOOKS
CORE LAB2: PROGRAMMING LAB IN C++

1. Write a C++ Program to create a class to implement the Data Structure STACK. Write a constructor to initialize the TOP of the STACK. Write a member function PUSH() to insert an element and member function POP() to delete an element check for overflow and underflow conditions.

2. Write a C++ Program to create a class ARITHMETIC which consists of a FLOAT and an INTEGER variable. Write a Member function ADD(),SUB(),MUL(),DIV() to perform addition, subtraction, multiplication, division respectively. Write a member function to get and display values.

3. Write a C++ Program to read an integer number and find the sum of all the digits until it reduces to a single digit using constructors, destructors and inline member functions.

4. Write a C++ Program to create a class FLOAT that contains one float data member. Overload all the four Arithmetic operators so that they operate on the object FLOAT.

5. Write a C++ Program to create a class STRING. Write a Member Function to initialize, get and display strings. Overload the Operator “+” to Concatenate two Strings, “==” to Compare two strings.

6. Write a C++ Program to create a class, which consists of EMPLOYEE Detail like E_Number, E_Name, Department, Basic, Salary, Grade. Write a member function to get and display them. Derive a class PAY from the above class and write a member function to calculate DA, HRA and PF depending on the grade.

7. Write a C++ Program to create a class SHAPE which consists of two VIRTUAL FUNCTIONS Calculate_Area() and Calculate_Perimeter() to calculate area and perimeter of various figures. Derive three classes SQUARE, RECTANGLE, TRIANGLE from class Shape and Calculate Area and Perimeter of each class separately and display the result.

8. Write a C++ Program to create two classes each class consists of two private variables, a integer and a float variable. Write member functions to get and display them. Write a FRIEND Function common to both classes, which takes the object of above two classes as arguments and the integer and float values of both objects separately and display the result.

9. Write a C++ Program using Function Overloading to read two Matrices of different Data Types such as integers and floating point numbers. Find out the sum of the above two matrices separately and display the sum of these arrays individually.

10. Write a C++ Program to check whether the given string is a palindrome or not using Pointers.

11. Write a C++ Program to create a File and to display the contents of that file with line numbers.

12. Write a C++ Program to merge two files into a single file.
ALLIED PAPER 2: COMPUTER BASED OPTIMIZATION TECHNIQUES

Subject Description: This subject deals with various optimization techniques for linear programming, Transportation and assignment problems, Game theory, PERT and CPM. Goal: To learn about the managerial concepts like decision making, optimization etc. Objective: On successful completion of this subject the students should have:
- Understanding various mathematical applications in industries.
- Decision making for real time environment.

UNIT I:

UNIT II:
Transportation and assignment problem - Integer Programming Branch and Round Techniques - Assignment and Traveling Salesman Problem.

UNIT III:
Game Theory - Concept of Pure and Mixed Strategies – Solving 2 x 2 matrix with and without saddle point - n x 2 - 2 x m games. Replacement models - Elementary replacement models - present value - rate of return - depreciation - Individual replacement – Group replacement.

UNIT IV: (Derivations not included)
Queuing Theory - definition of waiting line model -Queue discipline - traffic intensity - poison arrival – Birth death process - Problem from single server: finite and infinite population model – Problems from multi server: finite and infinite population model.

UNIT V:
PERT & CPM - Network representation - backward pass - Forward pass - computation - Pert Network - Probability factor – updating and Crashing.

TEXT BOOKS

REFERENCE BOOKS
2. Problems in operations research - P K Gupta D S Hira, S. Chand Pub
CORE 4 : OPERATING SYSTEM

Subject Description : This Subject deals with the Operating System.

Goal : To learn about Operating System

Objective : On Successful Completion of this subject the students should have:
- Concepts , Process , Files , Dead Lock Etc.,

UNIT I:

UNIT II:

UNIT III:

UNIT IV:
Memory Management: Swapping - Virtual Memory - Memory Management without Swapping – Segmentation - Using MS DOS - MS DOS shell – MS DOS File System.

UNIT V:
Unix: Unix Goals- Interface to Unix-Process in Unix- Unix file system- Memory Management System Calls in Unix.

TEXT BOOK:

REFERENCE BOOK:
CORE 5: JAVA PROGRAMMING

Subject Description: This Subject deals with the JAVA Programming.
Goal: To learn about Java.
Objective: On Successful Completion of this subject the students should have:
- Writing Programming ability on Java like Encapsulation, Data Abstraction, Inheritance, Polymorphism and Exception handling, Applet etc.

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:
E.BALAGURUSAMY – “Programming With JAVA a Primer “ 3rd Edition TMH.
CORE LAB 3: PROGRAMMING LAB – JAVA

➢ Create an Employee Package to Maintain the Information about the Employee. Use Constructors to Initialize the Employee Number and Use Overloading Method to set the Basic Pay of the Employee. By Using this Package Create a Java Program.
➢ Program to Implement Polymorphism, Inheritance and Inner Classes.
➢ Java Program to Handle Different Mouse Events.
➢ Create an Applet for a Calculator Application.
➢ Java Program to Maintain the Student Information
➢ Animate Images at Different Intervals by using Multithreading Concepts.
➢ Program to sent a text message to another System and Receive the text message from the System.
➢ Java Program by using JDBC Concepts to Access a Database.
➢ Java Program to Implement RMI.
➢ Java Program by using to Implement the Tree Viewer.
➢ Java Bean Program to view an Image.
ALLIED PAPER 3 : BUSINESS ACCOUNTING

Goal: To enable the students to learn principles and concepts of Accountancy.

Objective: On successful completion of this course, the student should have understood
- Concepts and conventions of Accounting.
- Basic Accounting framework

UNIT –I

UNIT – II
Final accounts of a sole trader with adjustments – Errors and rectification

UNIT – III
Bill of exchange- Accommodation bills – Average due date – Account current.

UNIT – IV
Accounting for consignments and Joint ventures

UNIT – V
Bank Reconciliation statement – Receipts and Payments and income and expenditure account and Balance sheet – Accounts of professionals.

Note : Distribution of Marks between problems and theory shall be 80% and 20%.

BOOKS FOR REFERENCE
2. T.S.Grewal – Introduction to Accountancy- S.Chand & Company Ltd.,
DIPLOMA PAPER 1: MULTIMEDIA & ITS APPLICATIONS

Subject Description: This Subject deals with the Multimedia & its Application

Goal: To learn about Multimedia

Objective: On Successful Completion of this subject the students should have:
- Media, Sound & Audio, Images, Animation, Video etc.,

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:

REFERENCE BOOK:
Fred T. Hofstetter – “Multimedia Literacy” – 3rd edition TMH.
CORE 6: VISUAL PROGRAMMING (VB)

**Subject Description:** This Subject deals with the Visual Programming.

**Goal:** To learn about Visual Programming.

**Objective:** On Successful Completion of this subject the students should have:
- Writing Programming ability on Visual Basic.

**UNIT I:**

**UNIT II:**

**UNIT III:**

**UNIT IV:**

**UNIT V:**
Clip Board, DDE, OLE, Data Control – Programming with Data Control – Monitoring Changes to the Databases – SQL – Basics Database Objects.

**TEXT BOOK:**
CORE 7: SOFTWARE ENGINEERING

Subject Description: This Subject deals with the Software Engineering

Goal: To learn about Software Engineering

Objective: On Successful Completion of this subject the students should have:

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:

REFERENCE BOOK:
CORE LAB 4 : PROGRAMMING LAB - VB

➢ Develop a VB Project to Check User Name & Password Given by User.
➢ Develop a VB Project to Add & Remove Items From List Box.
➢ Develop a VB Project to Copy all Items in a List Box to Combo Box.
➢ Develop a VB Project to Enter and Display Student Information.
➢ Develop a VB Project to Scroll Text from Left to Right Using Timer.
➢ Develop a VB Project to Mini Calculator Functions.
➢ Develop a VB Project to Documents typing using MDI Form.

Use Employee Information For the Following Projects.
➢ Develop a VB Project to Search a Record in MS-ACCESS database using data control.
➢ Develop a VB Project to Delete a Record From MS-ACCESS database using data control.
➢ Develop a VB Project to Insert a Record in MS-ACCESS database using ADO.
➢ Develop a VB Project to Modify a record in MS-ACCESS database using ADO.
ALLIED PAPER 4 : MANAGEMENT INFORMATION SYSTEM

Subject Description: This Subject deals with the MIS
Goal: To learn about MIS
Objective: On Successful Completion of this subject the students should have:
- Management Role, Control, Process, DSS, BPR, Etc.,

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:

REFERENCE BOOK:
Robert Schultheis, Mary Sumner – “Management Information System” 4th edition, TMH.
DIPLOMA PAPER 2: MULTIMEDIA LAB

(USING PHOTOSHOP/FLASH/MACRO MEDIA)

- How to Create Sun Flower?
- How to Create Water Drops?
- How to Animate Plane Flying the Clouds?
- How to Create Plastic Surgery For Nose?
- How to Create Mouse?
- How to Create See thru text?
- How to Create Military Clothe?
- How to Create Stone Texture?
- How to Create Rollover Buttons?
- How to Create Realistic Stone Structure?
- How to Create Web Page?
- How to Convert Black and White to Color Photo?
- How to Create IceText?
- How to Create Realistic Blood Structure?
- How to Create Fog Effects.
CORE 8: RELATIONAL DATABASE MANAGEMENT SYSTEMS

Subject Description: This Subject deals with the RDBMS
Goal: To learn about RDBMS
Objective: On Successful Completion of this subject the students should have:
- Data Models, Structure, Transaction, Storage, SQL etc.,

UNIT I:

UNIT II:

UNIT III:

UNIT IV:
Object Relational DataBases: Nested Relations – Complex Types & Object Orientation – Querying with Complex Data Types – Creation of Complex Values & Objects – Comparsion of Object – Oriented & Object – Relational DataBases.

UNIT V:

TEXT BOOK:
CORE 9: ARTIFICIAL INTELLIGENCE

Subject Description: This Subject deals with the Artificial Intelligence

Goal: To learn about AI

Objective: On Successful Completion of this subject the students should have:
- Heuristic, Hill Climbing, Planning, Expert System etc.,

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:
CORE 10: CLIENT / SERVER COMPUTING

Subject Description: This Subject deals with the C/S Computing

Goal: To learn about C/S Computing

Objective: On Successful Completion of this subject the students should have:
- C/S Applications, GUI ETC.,

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:
Core Lab 5 : RDBMS LAB - ORACLE

Study Features of Commercial RDBMS Packages such as ORACLE and Developers 2000. Laboratory Exercise should include defining scheme of applications, Creation of a DataBase, Writing SQL Queries to retrieve information from database. Use of host language interface with embedded SQL. Use of forms and report writer package. Some Sample Applications, which may be programmed are given below.

- Banking System Various Schemed
- On-Line Reservation System
- Personal Information
- Student Mark Processing System
- Hotel Management
- Stock Maintenance
- College Admission System
DIPLOMA PAPER 3: ANIMATION TECHNIQUES

Subject Description: This Subject deals with the Animation Techniques.

Goal: To learn about Animation.

Objective: On Successful Completion of this subject the students should have:
- 2D & 3D Animation, Script Animation, Motion Caption, Audio & Video Format etc.

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:
Joestadaro, Donkim – “Maya 6.0 Bible “.
Kelly Ldot Murtock – “3DS Max Bible “.

Reference Book:
CORE 11: SOFTWARE TESTING

Subject Description: This subject deals software testing concepts like unit-wise testing, integration testing and acceptance testing.

Goal: Knowledge on software testing and how to test the software at various levels.

Objective: To inculcate knowledge on Software testing concepts.

UNIT-I:

UNIT-II:

UNIT-III:

UNIT-IV:

UNIT-V:

TEXT BOOKS:

REFERENCE BOOKS:
CORE 12 : COMPUTER NETWORKS

Subject Description : This Subject deals with the Computer Networks

Goal : To learn about Computer Network

Objective : On Successful Completion of this subject the students should have:
- Mobile Communication, Wireless Transmission etc.,

UNIT I :

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK: 

REFERENCE BOOK :
Godbols – “ Data Communication & Networking “ , TMH.

CORE LAB 6 : SOFTWARE TESTING LAB

Write at least 10 TEST CASES for the following programs. Test cases can be for Input data, Conditional expressions, control transfer, output, etc. Run-Test-Debug- until all the test cases are in success status. Marks distribution as follows:
1. List of Test Descriptions (at least 10) for the Program. (20%)
2. Test Cases (40%)
3. Program with all test case results success (30%)
4. Record (10%)

**TEST CASE Example:**

<table>
<thead>
<tr>
<th>Test-Id</th>
<th>Test Description</th>
<th>Test Steps</th>
<th>Expected Output</th>
<th>Actual Output</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-01</td>
<td>Acceptance of 10 digit input data</td>
<td>Input 10 Digit Number</td>
<td>Accepting 10 digit number</td>
<td>Accepted 10 digit number</td>
<td>Success</td>
</tr>
<tr>
<td>TC-02</td>
<td>Non-acceptance of character data</td>
<td>Input a character data ‘X’</td>
<td>Character X should not be accepted</td>
<td>Accepting Character data</td>
<td>Failure</td>
</tr>
</tbody>
</table>

Modify PIC X(10) into PIC 9(10) and then run program for Test-id TC-02 again

<table>
<thead>
<tr>
<th>Test-Id</th>
<th>Test Description</th>
<th>Test Steps</th>
<th>Expected Output</th>
<th>Actual Output</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC-02</td>
<td>Non-acceptance of character data</td>
<td>Input a character data ‘X’</td>
<td>Character X should not be accepted</td>
<td>Character data not accepted</td>
<td>Success</td>
</tr>
<tr>
<td>TC-03</td>
<td>Digit sum of 10 digit is in single digit</td>
<td>Output data</td>
<td>Single digit sum</td>
<td>Single digit Sum</td>
<td>Success</td>
</tr>
</tbody>
</table>

**PRACTICAL LIST**

1. Test the COBOL program: Finding the sum of individual digits of a 10-digit number until a single digit is produced.

2. Test the COBOL program: Accept the inputs student Name, Marks for five subjects and declare the result as PASS if the student gets minimum 40 in each subject otherwise declare the result as FAIL.

3. Test the COBOL program: Accept the date in DDMMYY format and display the result in the format 3rd APR 1998.

4. Test the C program: Sort and store the elements two arrays of integers into the third list.

5. Test the C program: Experiment the operations of STACK using array implementation.

6. Test the C program: Menu-driven option for QUEUE operations to perform the following:
   1. Insertion
   2. Deletion
   3. Modification
   4. List

7. Test the C++ Program: Palindrome string checking program. (using Pointers)
DIPLOMA PAPER 4: ANIMATION LAB

USING PHOTOSHOP/FLASH/MACRO MEDIA

- How to Create Shapes and Drawings in Flash?
- How to Change a Shape to Another Shape? (Shape Animation)
- Create a Man to Walk with the help of Key Frame Animation.
- Draw a Bird with Flash tools and make it fly with Key Frame Animation.
- Change the Colors of a Object with the Help of Animation.
- Animate a Ball with the help of Guide line Animation (Path Animation).
- Create a Shining Stores with the help of Movie Clip.
- Create Buttons & Link with other Frames.
- Create a Album with the help of Buttons.
- Create a 3D Rotation of a Box with the Help of Shape Animation.
- How to Create Morphing between two images in FLASH.
- Create a Simple game with the help of Action Script.
- Make a new Mouse Pointer with the help of action script.
- How Import Pictures from Photoshop & Interlinked them.
- How we are give Password with the help of action script to a website?
ELECTIVE I - A : E-COMMERCE

Subject Description : This Subject deals with the E-Commerce
Goal : To learn about E-Commerce
Objective : On Successful Completion of this subject the students should have:
- E-Commerce, E-Market, EDI, Business Strategies etc.,

UNIT I:

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK :

REFERENCE BOOK:
Jeffrey F.Rayport,Bernard J.Jaworski –“ Introduction to E-Commerce” – 2ND EDITION TMH.
ELECTIVE I - B : WIRELESS MOBILE COMMUNICATIONS

Subject Description - This Course presents the Wireless Mobile Communications.
Goals - To enable the students to learn the fundamentals of Wireless Transmission.
Objective
On successful completion of the course the students should have:

• Understood the wireless communication principles, wireless networking and wireless standards.

Contents
UNIT I

UNIT II
Tele Communication Systems : GSM - DECT - TETRA – UTMS-PACS - Personal Handy Phone System (PHS) - Pacific Digital Cellular (PDC) and IMT 2000.

UNIT III

UNIT IV

UNIT V

REFERENCE BOOKS :
5. Richharia – Mobile Satellite Communications : Principles and Trends, Pearson Education
ELECTIVE I - C : DISTRIBUTED COMPUTING

Subject Description
This Course presents the Data Distribution through the Network.

Goals
To enable the students to learn about decentralization of data to acquire reliability and availability of data.

Objective
On successful completion of the course the students should have:
- Understood what is the need of data distribution and how it can be done.

Contents

Unit I
Distributed Systems : Fully Distributed processing Systems, Networks and Interconnection Structures, Designing a Distributed System.

Unit II
Distributed Systems : Pros and Cons of Distributed processing, Distributed Databases, the challenge of Distributed Data, Loading Factors, Managing The Distributed Resources, Division of responsibilities.

Unit III

Unit IV

Unit V

REFERENCE BOOKS:
2. Uyless D.Black,”Data Communications & Distributed Networks”.(Unit II & III)
3. Joel M.Crichlow,”An Introduction to Distributed & Parallel Computing”.(Unit IV)
ELECTIVE II – A : WEB TECHNOLOGY

Subject Description: This Subject deals with the Web Technology.

Goal: To learn about web technologies

Objective: On Successful Completion of this subject the students should have:
- TCP/IP to Internet application architectures, EDI etc.,

UNIT I:
Internetworking Concepts, Devices, Basics, History and Architecture – TCP/IP

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK:
ELECTIVE II – B: SOFTWARE QUALITY ASSURANCE

Subject Description
This Course presents the essentials of Software Quality, Plan for SQA, Standards, Tools for SQA.

Goals:
To enable the students to learn the Concepts and Principles of SQA.

Objectives:
On successful completion of the course the students should have:
- Understood the principles of SQA
- Must be able to judge the quality of Softwares.

Content
UNIT I
Introduction to software quality – Software modeling – Scope of the software quality program – Establishing quality goals – Purpose, quality of goals – SQA planning software – Productivity and documentation.

UNIT II

UNIT III

UNIT IV
Tools, Techniques and methodologies, Code control, Media control, Supplier control, Records collection, Maintenance and retention, Training and risk management.

UNIT V
ISO 9000 model, cmm model, Comparisons, ISO 9000 weaknesses, cmm weaknesses, SPICE – Software process improvement and capability determination.

REFERENCES
ELECTIVE II - C: SOFTWARE RELIABILITY

Subject Description
This course provides the insight in to the reliability factors of the Software.

Goal: To enable the students to learn about the principle and concepts of Software reliability.

Objectives:
On successful completion of the course the students must have
- understood the concepts of Software reliability
- analysed the quality standards

Content
UNIT I

UNIT II
The phases of a Software Project - Monitoring the development process – The software life cycle models - software engineering - Structured Analysis and structured Design - Fault tolerance - Inspection - Software cost and schedule.

UNIT III
Software quality modeling - Diverse approaches and sources of information - Fault avoidance, removal and tolerance - Process maturity levels (CMM) - Software quality assurance (SQA) - Monitoring the quality of software - Total quality management (TQA) - Measuring Software Reliability - The statistical approach - Software reliability metrics.

UNIT IV
Data Trends - Complete prediction Systems - overview of some software reliability models - The recalibration of the models - Analysis of model accuracy - Reliability growth models and trend analysis - Software Costs Models - Super models.

UNIT V

REFERENCES
ELECTIVE III – A : DATA MINING

Subject Description : This Subject deals with the Data Mining
Goal : To learn about Data Mining
Objective : On Successful Completion of this subject the students should have:
- Matrices , Decision tree , Neural Network , Algorithms etc.,

UNIT I:
Basic Data Mining Tasks – Data Mining Versus Knowledge Discovery in Data Bases – Data Mining Issues – Data Mining Matrices – Social Implications of Data Mining – Data Mining from Data Base Perspective.

UNIT II:

UNIT III:

UNIT IV:

UNIT V:

TEXT BOOK :

REFERENCE BOOK :
Jiawei Han & Micheline Kamber – “ Data Mining Concepts & Techniques “ 2001 Academic Press.
ELECTIVE III – B : COMPONENT TECHNOLOGY

SUBJECT DESCRIPTION : This course presents the middle ware technologies that are available and explaining how this can be used for real time applications.

GOALS : To enable the students to learn the basic functions and concepts of COM, DCOM and CORBA.

OBJECTIVES :
   On successful completion of the course the students should have
   Understood the facilities available in component technology
   Learnt how this can be used for real time application.

UNIT I
Information system - Analyzing the Scenario challenges - CORBA overview -
Concepts - Overview of CORBA IDL - IDL Tutorial Conversion of 00 design to IDL -
IDL Guidelines - Overview of CORBA and Standard Object model - Architecture -
Clients &
Object Implementation interface and implementation.

UNIT II
Language mapping - Portability and inter operability - OLE integration - CCRBA
services - Information Management Services - Task Management- System Management -
Infrastructure of Services.

UNIT III
Facilities and domains - horizontal - Vertical facilities - Leveraging the OMG Process -
Relationship with other technologies.

UNIT IV
The CORBA migration process - software Architecture - Applications Design using
software
Architect ii

UNIT V
Migration case studies - Problem and Objective standard based Profile - Project context -
Business objects and Process - Interface migration.

REFERENCE BOOK:
I. Inside CORBA — Distributed Object Standards and Applications Thomas J. owtray,
ELECTIVE III – C : MASTERING LAN AND TROUBLE SHOOTING

Subject Description  This Course presents the details of Local Area Networks.
Goals  To enable the students to learn about the internal organization of a PC
Objective  On successful completion of the course the students should have:
  • Understood types of faults and how to solve the problems

Contents
UNIT I  PC- Hardware overview
  Introduction to computer organization-Memory-PC family-PC hardware-interconnections between Boxes-Inside the boxes:-motherboard, daughter boards, floppy disk drive, HDD, speaker, mode switch, front panel indicators & Control-mother board logic-memory space-I/O port address-wait state-interrupts -I/O data transfer-DMA channels-POST sequence.

UNIT II PERIPHERAL DEVICES
  Display Adapter:-CRT display- CRT controller principle -CRT controller 6845
  Printer controller:-Centronics interface-programming sequence -Hardware overview-printer-sub assemblers.

UNIT III MOTHERBOARD CIRCUITS
  Mother board functions-functional units and inter communications:-Reset logic -CPU nucleus logic-DMA logic-Wait state logic-NM logic-speaker logic-keyboard interface-SMPS.

UNIT IV INSTALLATION AND MAINTENANCE
  Introduction-pre installation planning -installation practice-routine checks-special configuration memory up gradation - HD up gradation - DOS command(Internal and external).Preventive maintenance-system usage.

UNIT V TROUBLE SHOOTING

REFERENCE BOOKS:
3.  Winn & Rosch - "Hardware Bible" , Tec media.
4.  Ray Duncan - "Dos Programming".