# THIRUVALLUVAR UNIVERSITY

## BACHELOR OF COMPUTER APPLICATIONS

### DEGREE COURSE

### UNDER CBCS

(with effect from 2008-2009)

The Course of Study and the Scheme of Examinations

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<th>Year/Semester</th>
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THIRUVALLUVAR UNIVERSITY

BACHELOR OF COMPUTER APPLICATIONS

SYLLABUS

UNDER CBCS

(with effect from 2008-2009)

I SEMESTER

PAPER I

DIGITAL LOGIC AND DESIGN

Unit-I: Binary Systems :

Unit-II: Boolean Algebra and Logic Gates :

Unit-III: Simplification of Boolean Functions
The Map Method - Two and Three Variable Maps - Four Variable Map - Five and Six Variable Maps - Product of Sums Simplifications - NAND and NOR Implementation - Other Two Level Implementations - Don't Care Conditions.

Unit-IV: Combinational Logic
Introduction - Adders - Subtractors - Code Conversion - Binary Adder - Encoder - Decoders - multiple and demultiplexer
UNIT-V: Sequential circuits:

Flip Flops - Registers - Shift registers - Ripple counters - Synchronous Counters - Timing Sequences - The Memory Unit.

Text Book


Reference Books

2. Digital Logic Design - Ployd.
ALLIED I

PAPER I

MATHEMATICAL FOUNDATIONS I

Objectives
To know about
Logical operators, validity of arguments, set theory and set operations, relations and functions, linear operations, Binary algebra, Permutations & Combinations, Differentiation, Straight lines, pair of straight lines, Circles, Parabola, Ellipse, Hyperbola.

UNIT-I : SYMBOLIC LOGIC
proposition, Logical operators, conjunction, disjunction, negation, conditional and bi-conditional operators, converse, Inverse, Contra Positive, logically equivalent, tautology and contradiction. Arguments and validity of arguments.

UNIT-II : SET THEORY
Sets, set operations, venndiagram, Properties of sets, number of elements in a set, Cartesian product, relations & functions,
Relations: Equivalence relation. Equivalence class, Partially and Totally Ordered sets,
Functions: Types of Functions, Composition of Functions.

UNIT-III : BINARY OPERATIONS

UNIT-IV : DIFFERENTIATION
Simple problems using standard limits,
Differentiation, successive differentiation, Leibnitz theorem, partial differentiation, Applications of differentiation, Tangent and normal, angle between two curves, Maximum and Minimum values (Second derivative test), Curvature and radius of Curvature (Cartesian coordinates), Envelopes.

UNIT-V : TWO DIMENSIONAL ANALYTICAL GEOMETRY

Straight Lines - Pair Straight Lines — Circles.

Reference Books

2. U. Rizwan, Mathematical Foundation - SciTech, Chennai
ENVIRONMENTAL STUDIES

(For all UG Degree Courses)

UNIT-I: INTRODUCTION TO ENVIRONMENTAL SCIENCES: NATURAL RESOURCES:
Environmental Sciences - Relevance - Significance - Public awareness - Forest resources - Water resources - Mineral resources - Food resources - conflicts over resource sharing - Exploitation - Land use pattern - Environmental impact - fertilizer - Pesticide Problems - case studies.

UNIT-II: ECOSYSTEM, BIODIVERSITY AND ITS CONSERVATION:
Ecosystem - concept - structure and function - producers, consumers and decomposers - Food chain - Food web - Ecological pyramids - Energy flow - Forest, Grassland, desert and aquatic ecosystem.

Biodiversity - Definition - genetic, species and ecosystem diversity - Values and uses of biodiversity - biodiversity at global, national (India) and local levels - Hotspots, threats to biodiversity - conservation of biodiversity - In situ & Ex situ.

UNIT-III: ENVIRONMENTAL POLLUTION AND MANAGEMENT

UNIT-IV: SOCIAL ISSUES - HUMAN POPULATION

UNIT-V: FIELD WORK

Visit to a local area / local polluted site / local simple ecosystem - Report submission

REFERENCES


2. RAJAMANNAR, 2004, ENVIRONEMNTAL STUDIES, EVR COLLEGE PUB, TRICHY

3. KALAVATHY,S. (ED.) 2004, ENVIRONMENTAL STUDIES, BISHOP HEBER COLLEGE PUB., TRICHY
II SEMESTER

PAPER II

PROGRAMMING IN C

UNIT-I

UNIT-II
Data input and output functions - Simple C programs - Flow of control - if, if-else, while, do-while, for loop, Nested control structures - Switch, break and continue, go to statements - Comma operator.

UNIT-III
Functions -Definition - prototypes - Passing arguments — Recursion- Storage Classes - Automatic, External, Static, Register Variables.

UNIT-IV
Arrays - Defining and Processing - Passing arrays to functions - Multi-dimension arrays - Arrays and Strings. Structures and unions - User defined data types - Passing structures to functions - Self-referential structures - Unions - Bit wise operations.

UNIT-V
Text Book

Reference Books
CORE PRACTICAL I

A. PC SOFTWARE (MS Word, Excel And Power Point)

**MS-WORD**

1. Text Manipulations
2. Usage of Numbering, Bullets, Tools and Headers
3. Usage of Spell Check and Find and Replace
4. Text Formatting
5. Picture Insertion and Alignment
6. Creation of Documents Using Templates
7. Creation of Templates
8. Mail Merge Concept
9. Copying Text and Picture From Excel
10. Creation of Tables, Formatting Tables
11. Splitting the Screen
12. Opening Multiple Document, Inserting Symbols in Documents

**MS-EXCEL**

1. Creation of Worksheet and Entering Information
2. Aligning, Editing Data in Cell
3. Excel Function (Date, Time, Statistical, Mathematical, Financial Functions)
4. Changing of Column Width and Row Height (Column and Range of Column)
5. Moving, copying, Inserting and Deleting Rows and Columns
6. Formatting Numbers and Other Numeric Formats
7. Drawing Borders Around Cells
8. Creation of Charts Raising Moving
9. Changing Chart Type
10. Controlling the Appearance of a Chart
MS -POWER POINT

Working With Slides
1. Creating, saving, closing presentation
2. Adding Headers and footers
3. Changing slide layout
4. Working fonts and bullets
5. Inserting Clip art
   5.1 working with clipart
   5.2 Applying Transition and animation effects
6. Run and Slide Show

B. PROGRAMMING IN C

I Summation of Series
1. Sin(x)
2. Cos(x)
3. Exp(x) (Comparison with built in functions)

II String Manipulation
1. Counting the no. of vowels, consonants, words, white spaces in a line of text and array of lines
2. Substring detection, count and removal
3. Finding and replacing substrings

III Recursion
1. GCD of two numbers
2. Maximum and Minimum

IV Matrix Manipulation
1. Addition, Subtraction and Multiplication
2. Determinant of a Matrix
V Sorting and Searching
1. Bubble Sort
2. Binary Search

VI File Manipulation
1. File Copying
2. Files using Command line arguments.
ALLIED I
PAPER II
MATHEMATICAL FOUNDATIONS II

Objectives

UNIT-I : MATRICES
Multiplication of matrices, Singular and Non-Singular matrices, Adjoint of a Matrix, Inverse of a matrix, Symmetric and Skew-Symmetric, Hermitian and Skew-Hermition, Orthogonal and unitary matrices, Rank of a matrix, Solution of Simultaneous Linear equations by

(i) Cramer’s rule.
(ii) Matrix Inversion Method.

UNIT-II: MATRICES
Test for Consistency and Inconsistency of linear equations, (Rank Method), characteristic roots and characteristic vectors, Cayley - Hamilton theorem, matrix of linear transformations: reflection about the x, y axes and the line y=x, rotation about the origin through an angle, expansion or compression, shears, translation.

UNIT-III
Integration Simple problems, integration of rational function involving algebraic expressions of the form
integrations using simple substitutions integrations involving trigonometric functions of the form

\[ \frac{1}{a^2 + bx + c}, \frac{1}{ax^2 + bx + c}, \frac{1}{ax^2 + bx + c} \]

Integration by parts.

UNIT-IV

Properties of definite integrals. Reduction formulae for
\[ \int x^n e^{ax} dx, \int \sin^n x dx, \int \cos^n x dx, \int x^n (1-x)^m dx, \]
applications of integration for (i) Area under plane curves, (ii) Volume of solid of revolution.

UNIT-V: ANALYTICAL GEOMETRY OF THREE DIMENSION

Planes, straight lines, spheres.

Reference Books

2. U. Rizwan, Mathematical Foundation - SciTech, Chennai

VALUE EDUCATION
(For all UG Degree Courses)

UNIT-I
Value Education - Definition - relevance to present day - Concept of Human Values - self introspection - Self esteem.

UNIT-II
Family values - Components, structure and responsibilities of family - Neutralization of anger - Adjustability - Threats of family life - Status of women in family and society - Caring for needy and elderly - Time allotment for sharing ideas and concerns.

UNIT-III
Ethical values - Professional ethics - Mass media ethics - Advertising ethics - Influence of ethics on family life - psychology of children and youth - Leadership qualities - Personality development.

UNIT-IV
Social values - Faith, service and secularism - Social sense and commitment - Students and Politics - Social awareness, Consumer awareness, Consumer rights and responsibilities - Redressal mechanisms.

UNIT-V
Effect of international affairs on values of life/ Issue of Globalization - Modern warfare - Terrorism. Environmental issues - mutual respect of different cultures, religions and their beliefs.
Reference Books


WEBSITES AND e-LEARNING SOURCES:

www.rkmissiondhe.org/education.html/
www.clallam.org/lifestyle/education.html/
www.sun.com/.. /edu/progrmws/star.html/
www.infoscouts.com
www.secretosuccess.com
www.lmillionpapers.com
http://militarilyfinance.umuc.edu/education/edu-network.html/
III SEMESTER

PAPER III

OBJECT ORIENTED PROGRAMMING USING C++

UNIT-I

Principles of Object Oriented Programming (OOP) : Evolution of C++ - Programming Paradigms - Key Concepts of OOP - Advantages of OOP - Usage of OOP and C++ .Input and Output in C++-Streams-Stream classes Unformatted console I/O operations-Member functions of istream class-manipulators-manipulators with parameters

UNIT-II

Introduction to C++; Tokens, Keywords, Identifiers, Variables, Operators, Expressions and Control Structures : If,If..Else, Switch – Repetitive Statements-for, while, do..while - Pointers and arrays

UNIT-III

Functions in C++ - Main Function - Function Prototyping - Parameters Passing in Functions - Values Return by Functions - inline Functions - Function Overloading

Classes and Objects; Constructors and Destructors; and Operator Overloading - Type of Constructors

UNIT - IV

UNIT-V


Text Books

PAPER IV
DATA STRUCTURE AND ALGORITHMS

UNIT-I
Definition of a Data structure - primitive and composite Data Types, Arrays, Operations on Arrays, Ordered lists.

UNIT-II
Stacks – Operations - Applications of Stack - Infix to Postfix Conversion, Recursion, Queue- operations.

UNIT-III

UNIT-IV
Trees and Graphs: Binary Trees - Operations – Recursive Tree Traversals- Graph - Definition, Types of Graphs, Graph Traversal – DFS and BFS

UNIT-V
Searching- linear and binary search – Sorting Insertion, Bubble, Quick And Merge sort.

Text Books
UNIT-I


UNIT-II

Internal Memory - Computer Memory System Overview, Semiconductor Main Memory, Cache Memory, Advanced DRAM organization.


UNIT-III


UNIT-IV

UNIT-V


Text Book:


References:


CORE PRACTICAL II

C++ AND DATA STRUCTURE LAB

1. Program to implement classes, create object and member functions.
2. Program to implement the concept of function overloading.
3. Program to implement the concept of Operator overloading.
4. Program to implement the concept of Inheritance.
5. Program to implement file handling concepts.
6. Implement PUSH, POP operations of stack using Arrays.
7. Implement add, delete operations of a queue using Arrays.
8. Creation, insertion, and deletion in Singly linked list.
10. Sorting-Quick sorting.
FINANCIAL ACCOUNTING

Objective for Financial Accounting and Cost and management Accounting
To provide wide options for Economics students to enter into the fields like M.A. (Eco.) M.B.E., C.A., I.C.W.A., M.Com., M.B.F., M.I.B., and M.B.A. successfully. As per the University norms students who have studied two Accounts Papers alone are eligible to get admission in M.Com., During the present regime of Globalization to succeed in the business, Trade and in Entrepreneurial activities knowledge in Accounts are very much essential. To create manpower to cater to the needs of the emerging corporate sector.

UNIT-I

UNIT-II
Final Accounts : Meaning - Preparation of Final Accounts - Trading Account - Profit and loss a/c Manufacturing a/c- Balance Sheet - Distinction between Trial Balance and Balance Sheet - Adjustment Entries.

UNIT-III
Depreciation Accounting : Meaning of Depreciation - Methods of Providing Depreciation - Fixed Percentage on Original Cost - Fixed Percentage on Diminishing Balance (including change in the method of depreciation).
UNIT-IV
Average Due Date: Meaning - Practical uses of average due date - basic problems in Average Due Date.

UNIT-V
UNIT – I


UNIT -II:

Marketing information system and sales order process in ERP: sales and Distribution in ERP –Pre sales activities – sales order processing – inventory Sourcing - Delivery – Billing – payment – Customer relationship Management – benefits of CRM

UNIT –III

Production and supply chain management information system: Production overview – The production planning process – The SAP ERP Approach to production planning – Sales forecasting – sales and operation Planning – Demand management – Material requirement planning in SAP ERP – ERP and supplier - supply chain

UNIT –IV

UNIT – V

Human resource process in ERP: HR with ERP — Advance HR features — Time management — Payroll — Travel management — Training and Development — Management by objectives — ERP process modeling

TEXT BOOK

1) ENTERPRISE RESOURCE PLANNING - ELLEN MONK and BRET WAGNER - 3rd edition - MGH
NON MAJOR ELECTIVE I

PAPER I

INTRODUCTION TO INFORMATION TECHNOLOGY

UNIT–I

UNIT–II
Microsoft Work - Microsoft Excel – Microsoft PowerPoint – Microsoft Access

UNIT–III

UNIT–IV
Introduction to Internet – Working of Internet- Internet Services – Internet Addressing – E-Mail Basics- Web Development Tools- Introduction to HTML

UNIT–V
References
IV SEMESTER
PAPER VI
COMPUTER NETWORKS

UNIT-I

UNIT – II

UNIT-III
Network layer : services of network layer - routing – shortest path routing

UNIT-IV

UNIT-V
Text book:

1) COMPUTER NETWORKS - ANDREW TANENBAUM - 3rd Edition PHI

Reference books

1) computer networks – WILLIAM STALLING - PHI
PAPER VII
OPERATING SYSTEM

UNIT-I
Introduction - types of operating systems - operating system services - system calls and system programs

UNIT-II
Process management - Process concepts - process scheduling - operation on process Inter process communication - CPU scheduling - scheduling algorithms - Deadlocks

UNIT-III
Memory Management - Single and multiple partitioned allocation – paging - segmentation - Virtual Memory Management - Demand paging and Page Replacement Algorithms

UNIT-IV

UNIT-V
UNIX: Unix system - A Case Study.

Text Book
Abraham Silberschatz and P. B. Galvin - Operating system concepts - Addison Wesley Publication.
UNIT I
Customizing a form - Writing a simple program - Tool box - Creating control - Name property - Command button - Access keys - Image control - Text boxes - Labels - Message boxes - Grid - Editing tools - Variables data types - String number.

UNIT II
Displaying information - Determinate loops, indeterminate loops - Conditionals - Built in function - Function and Procedure.

UNIT III
Arrays - List - Sorting and searching record - Control arrays - Grid control - Project with multiple form - Do events and sub main - Error trapping.

UNIT IV

UNIT V:
File and handling - File system control - File system objects.

Books for Study:
PRACTICAL III
VISUAL PROGRAMMING LAB

1. Building simple application
2. Working with Intrinsic controls and ActiveX controls
3. Application with multiple forms
4. Application with dialogues
5. Application with menus
6. Application using data control
7. Application using format dialogues
8. Drag and Drop events
9. Database Management
10. Creating ActiveX controls
UNIT-I
Branch Accounts: Dependent Branches - Stock and Debtors System - Distinction between Wholesale Profit and Retail Profit - independent branch (foreign branches excluded).

UNIT-II
Departmental Accounts: Basis for allocation of expenses - Inter Departmental Transfer at cost or selling price - Treatment of expenses which cannot be allocated.

UNIT-III
Installment Purchase System: Meaning and Legal Position - Distinction between Hire Purchase System and Installment Purchase System - Accounting Treatment.

UNIT-IV
Partnership Accounts: Admission of a partner - Retirement of a Partner - Death of a Partner - Dissolution of Partnership - Insolvency of a Partner - (Garner vs Murray) - Insolvency of all partners - gradual realisation of assets and piecemeal distribution.

UNIT-V
Mechanised System of Accounting: Advantages - Limitations - EDP.
**UNIT-I**
Electronic Commerce Framework, Traditional vs. Electronic business applications, the anatomy of E-commerce applications.

**UNIT-II**

**UNIT-III**
Network security and firewalls - client server network security - firewalls and network security - data and message security - encrypted documents and electronic mail.

**UNIT-IV**
Electronic Commerce and world wide web, consumer oriented E-commerce, Electronic payment systems, Electronic data interchange (EDI), EDI applications in business, EDI and E-commerce EDI implementation.

**UNIT-V**
Intraorganizational Electronic Commerce supply chain management.
Text Book

Reference Books
4) Saily Chan, ELECTRONIC COMMERCE MANAGEMENT, JOHN WILEY, 1998.
NON MAJOR ELECTIVE II
PAPER II
INTERNET AND ITS APPLICATIONS

UNIT - I
Introduction to Computers Programming Language types History of Internet Personal Computers History of World Wide Web- Micro software .NET Java-Web resources.

UNIT - II
Web Browsers- Internet Explorer- connecting to Internet Features of Internet explorer6 Searching the Internet- online help and tutorials- File Transmission Protocol (FTP) Browser settings.

UNIT - III
Attaching a file ,Electronic mail Creating an E-mail id Sending and Receiving mails attaching a file- Instance messaging - other web browsers.

UNIT - IV
Introduction to HTML headers- Linking- Images-special characters and line breaks- unordered lists- simple HTML programs.

UNIT - V
E-marketing consumer tracking Electronic advertising search engine-CRM credit card payments Digital cash and e-wallets micro payments- smart card

Text book
1) Internet and World Wide Web Third edition H.M.Deitel, P.J. Deitel and A.B.Goldberg- PHI

Book for Reference
1) The Internet- Complete Reference Harley hahn, Tata McGraw Hill
V SEMESTER
PAPER IX
DATABASE MANAGEMENT SYSTEMS

UNIT-I

UNIT-II
Relational Model - Structure - Formal Query Language - Relational Algebra - Tuple and Domain Relational Calculus.

UNIT-III
Structured Query Language - Basic Structure - Set Operations - Aggregate Functions - Date, Numeric and Character Functions - Nested Sub queries - Modification Of Databases Joined Relations-DDL - Embedded SQL.

UNIT-IV
Relational Database Design - Pitfalls - Normalisation Using Functional Dependencies - First Normal Form-Second Normal Form-Third Normal Form-Fourth Normal Form And BCNF.

UNIT-V

Text Books
PAPER X
COBOL PROGRAMMING

UNIT I
Introduction To Cobol — Identification Division — Procedure Division.

UNIT II
Debugging And Program Testing — Keyboard Input And Screen Display — Output Formatting — Arithmetic Operations.

UNIT III
Report Design And Coding — Conditional Operations — Designing And Writing Control Break Programs.

UNIT IV
Data Validation Design And Coding — Processing Arrays / Tables — Processing Multidimensional Tables.

UNIT V
Sorting — Master — Transaction File Processing — Indexed File Processing — Program Management

Books For Study.

1. Tyler Welburn And Wilson Price — Structured Cobol — (Fundamentals And Style) — Mcgraw Hill.
2. Roy M.K. And Ghosh Dastidar, Cobol Programming, Tata Mcgraw Hill
PRACTICAL IV
RDBMS (Oracle Lab)

1. Create a table Student-master with the following fields client_no, name, address, city, state, pincode, remarks, bal_due with suitable data types.
   a) Create another table supplier_table from client_master. Select all the fields and rename client_no with supplier_no and name with supplier_name.
   b) Insert data into client_master
   c) Insert data into supplier_master from client_master.
   d) Delete the selected row in the client_master.

2. Create a table sales_order with s_order_no and product_no as primary key. Set other fields to store client number, delivery address, delivery date, order status.
   a) Add a new column for storing salesman number using ALTER Command.
   b) Set the s_order_no as foreign key as column constraints.
   c) Set the s_order_no as foreign key as table constraints.
   d) Enforce the integrity rules using CHECK.

3. Create a table student_master with the following fields name, regno, dept and year with suitable data types. Use Select command to do the following.
   a) Select the student’s name column.
   b) Eliminate the duplicate entry in table.
   c) Sort the table in alphabetical order.
   d) Select all the Students of a particular department.
4. Create a table `sales_order_details` with the `s_order_no` as primary key and with the following fields: `product_no`, `description`, `qty_ordered`, `qty_disp`, `product_rate`, `profit_percent`, `sell_price`, `supplier_name`.

   a) Select each row and compute `sell_price*0.50` and `sell_price*1.50` for each row selected.

   b) Select `product_no`, `profit_percent`, `sell_price` where `profit_percent` is not between 10 and 20 both inclusive.

   c) Select `product_no`, `description`, `profit_percent`, `sell_price` where `profit_percent` is not between 20 and 30.

   d) Select the `suppliername` and `product_no` where `suppliername` has ‘r’ or ‘h’ as second character.

5. Create a table `master_book` to contain the information of `magazine_code`, `magazine_name`, `publisher`. Weekly/biweekly/monthly, `price`. Write PL/SQL block to perform insert, update, delete operations on the above table.

6. Create a table to contain phone number, user name, address of the phone user. Write a function to search for an address using phone numbers.

7. Create a table `stock` to contain the `itemcode`, `itemname`, current stock, date of last purchase. Write a stored procedure to seek for an item using `itemcode` and delete it, if the date of last purchase is before 1 year from the current date. If not, update the current stock.

8. Create a table to store the salary details of the employees in a company. Declare the Cursor to contain employee number, employee name and net salary. Use Cursor to update the employee salaries.
9. Create a table to contain the information about the voters in a particular constituency. Write a proper trigger to update or delete a row in the table.

10. Create a table to store the details of the Aluminus in an institution. Write a PL/SQL block to change address of a particular alumni. Write proper exceptions and appropriate error messages.
PRACTICAL V
COBOL PROGRAMMING LAB

The details of the problem statement can be obtained from the book
Tyler Welburn & Wilson Price — Structured COBOL (Fundamentals and Style)

The problem number used in the book is given inside the parenthesis
1. Earnings Report (Assignment 6-3)
2. Price-List (Assignment 7-1)
3. Test Grade Report (Assignment 8-1)
4. Account Balance Report (Assignment 9-1)
5. Ledger — Record validation (Assignment 10-1)
6. Department — Name Look up (Assignment 11-1)
7. Federal income tax Computation (Assignment 12-2)
8. Sort and Print Earnings File (Assignment 13-3)
9. Vehicle File Maintenance (Assignment 14-1)
10. Student Grade Inquiry (Assignment 15-1)
ELECTIVE I
(to choose 1 out of the given 2)
PAPER I.1
DATA MINING

UNIT-I
Introduction - What is Data mining, Data mining - important Data mining - various kind of data Data mining Functionalities – Various kinds of Patterns Pattern Interesting Classification of Data mining Systems Data mining Task Primitives Integration of Data Mining System Major issues in Data Mining

UNIT-II
Data Processing - Process the Data Descriptive Data Summarization – Measuring Central Tendency Dispersion of Data Graphic Displays of –Basic Descriptive Data Summaries Data Cleaning Data Integration and Transformation data Reduction
Data Discrimination - Concept Hierarchy Generation

UNIT-III
Data Warehouse OLAP Technology An overview - Data Warehouse Multidimensional Data Model Data Warehouse Architecture Data Warehouse Implementation From Data Warehouse to Data mining

UNIT-IV
Mining – Frequent Patterns Associations Correlations - Basic Concepts Road Map Efficient Scalable Frequent Item set Mining methods Mining – Various Kinds of Association rules Analysis - Association mining to Correlation Constrains Based Association mining
UNIT-V

Applications Trends - Data mining Applications Data mining – System Products Research Prototype Additional Themes on Data Mining Social impact of Data mining Trends in Data mining

Text Book :

1. Data Mining ( Concepts and Techniques ) Second Ed (Chapter 1,2,3,5,11)
   
   Author: Jiawei Han and Micheline Kamber Publishers: Morgan Kaufmann Publishers ( An imprint of Elsevier )

Reference Books :

1. Data Mining ( Next Generation Challenges and Future Directions )Author :
   
   Karguta, Joshi, Sivakumar & Yesha Publishers: Printice Hall of India ( 2007 )


PAPER I.2

MICROPROCESSORS AND ITS APPLICATIONS

UNIT – I

UNIT – II
Writing assembly level programs – Programming techniques such as looping, counting and indexing addressing nodes – Data Transfer Instructions – Arithmetic and Logic Operations – Dynamic Debugging.

UNIT – III

UNIT – IV
BCD to Binary and Binary to BCD conversions – BCD to HEX and Hex to BCD conversions – ASCII to BCD and BCD to ASCII conversion – BCD to seven segment LED Code conversions. Binary to ASCII and ASCII to Binary Conversions – Multibyte Addition – Multibyte Subtraction – BCD addition – BCD Subtraction – Multiplication and Division.

UNIT - V
Books For Study:

SKILL BASED SUBJECT III
PAPER III
MULTIMEDIA

UNIT- I
Definition - Classification - MM application - MM H/w - MM s/w - CDROM - DVD.

UNIT-II
MM Audio: Digital medium - Digital audio technology - sound cards - recording - editing - MP3 - MIDI fundamentals - Working with MIDI - audio file formats - adding sound to MM project.

UNIT-III
MM TEXT: Text in MM - MM graphics: coloring - digital imaging fundamentals - development and editing - file formats - scanning and digital photography

UNIT-IV
MM Animation: Computer animation fundamentals - Kinematics - morphing - animation s/w tools and techniques.

UNIT-V
MM Project: stages of project - MM skills - design concept - authoring - planning and costing – MM team

Reference Books
1. Multimedia Magic - S.Gokul revised and updated second edition - BPB
VI SEMESTER
PAPER XI
JAVA PROGRAMMING

UNIT- I
Introduction to Java - Features of Java - Object Oriented Concepts - Data Types - Variables - Arrays - Operators - Control Statements-Input and output-Scanner and System class-print(),println(), and printf() methods.

UNIT- II

UNIT- III

UNIT- IV

UNIT- V
Packages - Access Protection - Importing Packages - Interfaces - Exception Handling - Throw and Throws - Thread - Synchronization - Runnable Interface - Inter thread Communication – Multithreading - I/O Streams - File Streams - Applets - Introduction to Java API packages(java.lang and java.util)

Text Books
The objective of the project is to motivate them to work in emerging/latest technologies, help the students to develop ability, to apply theoretical and practical tools/techniques to solve real life problems related to industry, academic institutions and research laboratories.

The project is of 5 hours/week for one (semester VI) semester duration and a student is expected to do planning, analyzing, designing, coding, and implementing the project. The initiation of project should be with the project proposal. The synopsis approval will be given by the project guides.

The project proposal should include the following:
- Title
- Objectives
- Input and output
- Details of modules and process logic
- Limitations of the project
- Tools/platforms, Languages to be used
- Scope of future application

For the project work, the guide(internal) evaluate the work for 25 marks based on the performance of the candidates during the development of the project and the external examiner will evaluate the project work as follows:
- Project Report - 30 marks
- Viva-Voce - 45 marks

The Project work should be either an individual one or a group of not more than three members.
PRACTICAL VI

JAVA LAB

1. Finding area and Perimeter of a circle. Use Scanner class.
2. Determining the order of numbers generated randomly using Random Class.
3. String Manipulation (Substring removal, string replacement etc.,)
4. Drawing Rectangles, Ovals etc using Applet.
5. Implementing Thread based applications & Exception Handling.
6. Application using synchronization such as Thread based, Class based and synchronized statements.
7. Implementing GUI based applications using swing components (Jlabel, JButton, JTextField)
8. Implementing GUI based application using Layout managers and menus.
9. Application using file streams[sequential file]
10. Application using file streams[Random file]
PRACTICAL VII

WEB TECHNOLOGY LAB

1. Create a simple page introducing yourself how old you are, what you do, what you like and dislike. Modify the introduction to include a bullet list of what you do and put list the 5 things you like most and dislike as numbered lists. Create another page about your favorite hobby and link it to (and from) your main page. Center something, and put a quote on one of your pages.

2. Put an existing image on a web page. Create a table, use a heading and at least one use of row span/col. span. Color a page and some text within the page. Link to another site.

3. Create a new file called index.html.
   - Put the normal HTML document structure tags in the file.
   - Give it a title.
   - At the bottom of the page (i.e. the last thing between the body tags) put the following:
     - A horizontal rule.
     - A Link to your e-mail Address (With your name between the tag); remember to put the link to your E-Mail address within address tags.
     - A line break.
     - The date. (I have this same structure at the bottom of this page).
     - Above this block (which is called the footer), put a title in heading tags.
     - Add some text describing yourself (you can split this into multiple headings and Paragraphs if you wish).

4. Write a script to create an array of 10 elements and display its contents.

5. Write a function in Java script that takes a string and looks at it character by character.

6. Create a simple calculator using form fields. Have two fields for number entry & one field for the result. Allow the user to be able to use plus, minus, multiply and divide.
7. Create a document and add a link to it. When the user moves the mouse over the link, it should load the linked document on its own. (User is not required to click on the link).

8. Create a document, which opens a new window without a toolbar, address bar or a status bar that unloads itself after one minute.

9. Create a document that accepts the user’s name in a text field form and displays the same the next time when the user visits the site informing him that he has accessed the site for the second time, and so on.

10. Create a Web form for an online library. This form must be able to accept the Membership Id of the person borrowing a book, the name and ID of the book and the name of the book’s author. On submitting the form, the user (the person borrowing the book) must be thanked and informed of the date when the book is to be returned. You can enhance the look of the page by using various ASP.NET controls.
ELECTIVE II
(to choose 1 out of the given 2)

PAPER II.1
COMPUTER GRAPHICS

UNIT-I

UNIT-II
Attributes of output Primitives - line attributes - Color and Grayscale style - Area filling algorithms - Character attributes inquiry functions - Two dimensional transformation - Basic transformation - Composite transformation - Matrix representation - other transformations.

UNIT-III
Two - dimensional viewing - window- to view port co-ordinate transformation - clipping algorithms - Interactive input methods - Physical input devices - logical classification of input devices - interactive picture construction methods.

UNIT- IV
Three - dimensional concepts - Three dimensional display methods - parallel Projection - Perspective Projection - Depth Cueing - Visible line and surface identification - Three dimensional transformation.

UNIT-V
Three dimensional viewing - Projection - Viewing transformation - implementation of viewing operations - Hidden surface and Hidden line removal - backface removals.
Text Books
UNIT-I : INTRODUCTION

Introduction to client/server computing - Main frame-centric client/server computing - Down sizing and client/server computing - Preserving mainframe applications - Investment through porting - Client/server development tools - Advantages of Client/Server computing.

UNIT-II : CLIENT COMPONENT

Components of client/server applications - The client - Client service, request for services, RPC, windows services, Fax/print services, Remote boot services, other remote services - Utility services and other services, Dynamic data exchange, Object linking and embedding. Common request broker architecture - The server - detailed server functionality - The networking operating system - novell network - LAN manager - IBM LAN server - Banyan VINES-PC network file services - Server operating systems: Netware, OS/2, Windows NT unix - system application architecture (SAA)

UNIT-III : SERVER COMPONENT

Components of client/server architecture - Connectivity - Open Systems Interconnect (OSI) - Inter Process Communication (IPC) - Communication interface technology - Wide area network technology - Client/server development software - Platform migration and reengineering of existing systems - Hardware components.

UNIT-IV : DISTRIBUTED OBJECTS AND INTERNET

Client/server with distributed objects - Distributed objects and components - From orb to business objects - Compound Documents : The client framework - OLE/DCOM-Client/server and the Internet - Web client/server - The hyper text era - The interactive era - The Java object era - The distributed object era.
UNIT-V : APPLICATION DEVELOPMENT TOOLS

GUI front end to 3270/5250 screens - The prototype process - Application development - Workbench architecture - Information Engineering facility Architecture - EASEL Workbench - Ellipse - SQL Windows - Power builder - SQL Tool set. APT workbench component.

Text Book
1. Dewire and dawna travis,'client/server computing'-mcgraw hill-1993

Reference Books
ELECTIVE III
(to choose 1 out of the given 2)

PAPER III.1
SOFTWARE ENGINEERING

UNIT-I

UNIT- II

UNIT-III

UNIT- IV
Modern programming Language Features - Type Checking - Separate Compilation - User Defined Data Types - Data Abstraction - Scoping Rules - Exception Handling - Currency Mechanism Verification And Validation Techniques - Quality Assurance - States Analysis - Symbolic Excretion.
UNIT-V


Text Books


3. Software Engineering Programs Documentation Operating procedures

PAPER III.2

OBJECT ORIENTED ANALYSIS AND DESIGN

UNIT-I
System development - object basics development cycle methodologist patterns frame works unified approach UML.

UNIT-II
Use case models object analysis - object relations attributes methods class and object responsibilities.

UNIT-III
Design process design axioms class design object storage object interoperability.

UNIT-IV
User interface design view layer classes micro level processes view layer interface.

UNIT-V
Quality analysis testing strategies object orientation on testing test cases test plans continuous testing

Text book
SKILL BASED SUBJECT IV

PAPER IV

WEB TECHNOLOGY

UNIT-I
Internet Basic - Introduction to HTML - List - Creating Table - Linking
document Frames - Graphics to HTML Doc - Style sheet - Style sheet basic -
Add style to document - Creating Style sheet rules - Style sheet properties -
Font - Text - List - Color and background color - Box - Display properties.

UNIT-II
Introduction to Javascript - Advantage of Javascript - Javascript Syntax -
Datatype - Variable - Array - Operator and Expression - Looping Constructor -
Function - Dialog box.

UNIT-III
Javascript document object model - Introduction - Object in HTML - Event Handling - Window Object - Document object - Browser Object - Form Object - Navigator object Screen object - Build in Object - User defined object - Cookies.

UNIT-IV

UNIT-V
Request and Response Objects, Cookies, Working with Data - OLEDB connection class, command class, transaction class, data adaptor class, data set class. Advanced Issues - Email, Application Issues, Working with IIS and page Directives, Error handling. Security - Authentication, IP Address, Secure by SSL and Client Certificates.
**Reference Books**


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Examination Scheme Under CBCS. The evaluation of each course consists of two parts- internal assessment and external assessment. The responsibility of evaluating the former is vested in the hands of the teacher teaching the particular course. As per DU’s rules, a student must have at least two-thirds of attendance i.e. 66.67% attendance separately in lectures, tutorials, and practicals. Conclusion. The process of implementation of CBCS was subject to intense debate and discussion for quite a long time. Read more about Delhi University set to revise UG programmes, bring it under CBCS on Business Standard. The first batch of students who studied under choice-based credit system (CBCS) will be entering their last undergraduate year this year and the university wants the postgraduate courses to be in sync with the CBCS system before these students enter the master's programme, as per a report. Currently, the undergraduate courses in the university run on a semester system.