THIRUVALLUVAR UNIVERSITY

BACHELOR OF COMPUTER APPLICATIONS

DEGREE COURSE

UNIER CBCS
(with effect from 2008-2009)

The Course of Study and the Scheme of Examinations

Year/ Semester	Part	Subject	Paper	Title of the Paper	Ins. Hrs/ Week	Credit	Exam Hrs	IA	Uni. Exam.	Total
I Year I Semester	I	Language	Paper I		6	3	3	25	75	100
	II	English	Paper I		6	3	3	25	75	100
	III	Core	Paper I	Digital Logic and design	5	4	3	25	75	100
	III	Core Practical	Practical IA	PC Software Lab (MS Word, Excel and Power Point)	4	2	-	-	-	-
	III	Allied	Paper I	Mathematical Foundations I	7	5	3	25	75	100
	IV			**Environmental Studies**	2	2	3	25	75	100
I Year II Semester	I	Language	Paper II		6	3	3	25	75	100
	II	English	Paper II		6	3	3	25	75	100
	III	Core	Paper II	Programming in C	5	4	3	25	75	100
	III	Core Practical	Practical IB	Programming in C Lab (IA & IB)	4	2		40	60	100
	III	Allied	Paper II	Mathematical Foundations II	7	5	3	25	75	100
	IV			**Value Education**	2	2	3		50	50
II Year III Semester	III	Core	Paper III	Object Oriented Programming using C++	4	3	3	25	75	100
	III	Core	Paper IV	Data Structures and Algorithms	5	3	3	25	75	100
	III	Core	Paper V	Computer Architecture	5	4	3	25	75	100
	III	Core Practical II	Practical II	C++ and Data Structure Lab	4	2	3	20	30	50
	III	Allied	Paper III	Financial Accounting I	7	5	3	25	75	100
	IV	Skill Based Elective I	Paper I	Enterprise Resource Planning	3	3	3	25	75	100
		Non-Major Elective I	Paper I	Introduction to Information Technology	2	2	3	25	75	100

Year/ Semester	Part	Subject	Paper	Title of the Paper	Ins. Hrs/ Week	Credit	Exam Hrs	Max. Marks		
								IA	Uni. Exam.	Total
II Year IV Semester	III	Core	Paper VI	Computer Networks	5	4	3	25	75	100
	III	Core	Paper VII	Operating System	4	3	3	25	75	100
	III	Core	Paper VIII	Visual Programming	5	3	3	25	75	100
	III	Core Practical	Practical III	Visual Programming Lab	4	2		20	30	50
	III	Allied	Paper IV	Financial Accounting II	7	5	3	25	75	100
	IV	Skill Based Elective II	Paper II	E-Commerce	3	3	3	25	75	100
		Non-Major Elective II	Paper II	Internet and its applications	2	2	3	25	75	100
III Year V Semester	III	Core	Paper IX	Database Management System	6	5	3	25	75	100
	III	Core	Paper X	COBOL Programming	6	5	3	25	75	100
	III	Core Practical	Practical IV	RDBMS (Oracle lab)	5	5	3	40	60	100
	III	Core Practical	Practical V	COBOL Programming Lab	5	5	3	40	60	100
		Elective	Paper I	Data Mining / Microprocessor and its applications	5	5	3	25	75	100
	IV	Skill Based Elective III	Paper III	Multimedia	3	3	3	25	75	100
III Year VI Semester	III	Core	Paper XI	Java Programming	4	4	3	25	75	100
	III	Core	Paper XII	Project and Viva-Voce	5	4	3	25	75	100
	III	Core Practical	Practical VI	Java Lab	4	4	3	20	30	50
	III	Core Practical	Practical VII	Web technology -Lab	4	4	3	20	30	50
		Elective II	Paper II	Computer Graphics / Client Server Technology	5	5	3	25	75	100
		Elective III	Paper III	Software Engineering/ Object Oriented Analysis and Design	5	5	3	25	75	100
	IV	Skill Based Elective IV		Web Technology	3	3	3	25	75	100
	V	Extension Activities			-	1	-			50
				Total	180	140				3600

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 :

Digital Computers and Digital Systems - Binary Numbers - Number Base Conversion - Octal and Hexadecimal Numbers - Compliments - Binary Codes - Binary Storage and Registers - Binary Logic - Integrated Circuits.

Unit-II: Boolean Algebra and Logic Gates :

Basic Definitions of Boolean Algebra - Axiomatic Definition of Boolean Algebra - Basic Theorems and Properties of Boolean Algebra - Boolean Functions - Canonical and Standard Forms - Other Logic Operations - Digital 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 - Edcoder - Decoders - multiple and demultiplexture

UNIT-V: Sequential circuits:

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

Text Book

1. M. Morris Mano, "Digital Logic and Computer Design", PHI, 1996

Reference Books

1. Louis Neshelsky, "INTRODUCTION TO DIGITAL TECHNOLOGY", John Wiley & Sons, Third Edition, 1983.
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, linary 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

Types of Binary Operations: Commutative, Associative, Distributive and identity, Boolean algebra: simple properties. Permutations and Combinations.

UNIT-IV : DIFFERENTIATION
Simple problems using standard limits,

$$\lim_{x \to a} \frac{x^n - a^n}{x-a}, \quad \lim_{x \to 0} \frac{\sin x}{x}, \quad \lim_{x \to 0} \frac{\tan x}{x}, \quad \lim_{x \to 0} \frac{e^x - 1}{x}, \quad \lim_{n \to \infty} (1+1/n)^n, \quad \lim_{n \to 0} (1+n)^{1/n}$$

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

1. P.R.Vittal, Mathematical Foundations - Margham Publication, Chennai.

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

3. V.Sundaram & Others, Dircrete Mathematical Foundation - A.P.Publication, sirkali.

4. P.Duraipandian & Others, Analytical Geometry 2 Dimension - Emerald publication 1992 Reprint.

5. Manicavachagom pillay & Natarajan. Analytical Geometry part I - Two Dimension - S.Viswanathan (printers & publication) Put Ltd., 1991.

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 - Insitu & Exsitu.

UNIT-III: ENVIRONMENTAL POLLUTION AND MANAGEMENT

Environmental Pollution - Causes - Effects and control measures of Air, Water, Marine, soil, solid waste, Thermal, Nuclear pollution and Disaster Management - Floods, Earth quake, Cyclone and Land slides. Role of individuals in prevention of pollution - pollution case studies.

UNIT-IV: SOCIAL ISSUES - HUMAN POPULATION

Urban issues - Energy - water conservation - Environmental Ethics - Global warming - Resettlement and Rehabilitation issues - Environmental legislations - Environmental production Act. 1986 - Air, Water, Wildlife and forest

conservation Act - Population growth and Explosion - Human rights and Value Education - Environmental Health - HIV/AIDS - Role of IT in Environment and Human Health - Women and child welfare - Public awareness - Case studies.

UNIT-V: FIELD WORK

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

REFERENCES

1. KUMARASAMY, K., A.ALAGAPPA MOSES AND M.VASANTHY, 2004. ENVIRONMENTAL STUDIES, BHARATHIDSAN UNIVERSITY PUB, 1, TRICHY

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

C fundamentals Character set - Identifier and keywords - data types - constants - Variables - Declarations - Expressions - Statements - Arithmetic, Unary, Relational and logical , Assignment and Conditional Operators - Library functions.

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

Pointers - Declarations - Passing pointers to Functions - Operation on Pointers - Pointer and Arrays - Arrays of Pointers - Structures and Pointers - Files: Creating, Processing ,Opening and Closing a data file.

Text Book

Ashok N. Kamthane, Programming with ANSI and Turbo C, Pearson Education,2006

Reference Books

1. B.W. Kernighan and D.M.Ritehie, The C Programming Language, 2nd Edition, PHI,   1988.
2. H. Schildt, C: The Complete Reference, 4th Edition, TMH Edition, 2000.
3. Kanetkar Y., Let us C, BPB Pub., New Delhi, 1999.

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

To know about Matrix Operations, Symmetric, Skew-Symmetric, Hermitian, Skew-Hermitian, Orthogonal, Unitary Matrices. Rank of a Matrix Solutions of linear equations Consistency and Inconsistency, Characteristic roots and Characteristics Vectors, Cayley - Hamilton Theorem, Integration of rational functions, Integration by parts, Reduction formulae, Area and volume using integration, Planes, Straight lines, Spheres, Curves, Cylinders.

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

$$\frac{1}{ax^2+bx+c} \quad , \quad \frac{1}{\sqrt{ax^2+bx+c}} \quad , \quad \frac{px+q}{ax^2+bx+c} \quad \frac{px+q}{\sqrt{ax^2+bx+c}} \quad , \quad \frac{px+q}{\sqrt{ax^2+bx+c}}$$

integrations using simple substitutions integrations involving trigonometric functions of the form

$$\frac{1}{a+b\cos x} \quad , \quad \frac{1}{a^2\sin^2 x+b^2\cos^2 x} \quad , \quad \text{Integration by parts.}$$

UNIT-IV

Properties of definite integrals. Reduction formulae for

$\int x^n e^{ax}dx$, $\int \sin^n x\,dx$, $\int \cos^n x\,dx$, $\int x^m (1-x)^n\,dx$, applications of integration for (i) Area under plane caurves, (ii) Volume of solid of revolution.

UNIT-V: ANALYTICAL GEOMETRY OF THREE DIMENSION

Planes, straight lines, spheres.

Reference Books

1. P.R.Vittal, Mathematical Foundations - Margham Publication, Chennai.

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

3. V.Sundaram & Others, Dircrete Mathematical Foundation - A.P.Publication, sirkali.

4. P.Duraipandian & Others, Analytical Geometry 3 Dimension – Emerald publication 1992 Reprint.

Manicavachagom pillay & Natarajan. Analytical Geometry part II - three Dimension - S.Viswanathan (printers & publication) Put Ltd., 1991.

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

1. T. Anchukandam and J. Kuttainimathathil (Ed) Grow Free Live Free, Krisitu Jyoti Publications, Bangalore (1995)
2. Mani Jacob (Ed) Resource Book for Value Education, Institute for Value Education, New Delhi 2002.
3. DBNI, NCERT, SCERT, Dharma Bharti National Institute of Peace and Value Education, Secunderabad, 2002.
4. Daniel and Selvamony - Value Education Today, (Madras Christian College, Tambaram and ALACHE, New Delhi, 1990)
5. S. Ignacimuthu - Values for Life - Better Yourself Books, Mumbai, 1991.
6. M.M.M.Mascaronhas Centre for Research Education Science and Training for Family Life Promotion - Family Life Education, Bangalore, 1993.

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.secretofsuccess.com

www.lmillionpapers.com

http://militarlyfinance.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

Inheritance : Single Inheritance - Multilevel inheritance - Multiple inheritance - Hierarchical Inheritance - Hybrid Inheritance. Pointers - Virtual Functions and Polymorphism

UNIT-V

Working with Files : Classes for File Stream Operations - Opening and Closing a File - End-of-File Detection - File Pointers - Updating a File - Error Handling during File Operations - Command-line Arguments

Text Books

1. Ashok N.Kamthane, Object Oriented Programming with ANSI & Turbo C ++, Pearson Education, 2006

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

Singly Linked List - Operations, Application - Representation of a Polynomial, Polynomial Addition; Doubly Linked List - Operations.

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

1. C++ plus Data structure by N.Dale, publishers narosa publishing, Edition 2000

PAPER V

COMPUTER ARCHITECTURE

UNIT-I

Introduction - Organization and Architecture, Structure and Function Computer Evolution and Performance - A Brief History of Computers, Designing for Performance, Pentium and Power PC Evolution. System Buses - Computer Components, Computer Function, Interconnection Structures, Bus Interconnection, PCI, Future bus.

UNIT-II

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

External Memory - Magnetic Disk, RAID, Optical Memory, Magnetic Tape. Input / Output - External Devices, I/O Modules, Programmed I/O, Interrupt-Driven I/O,DMA,I/O channels and Processors, The External Interface. Operating System Support - Operating System Overview, Scheduling, Memory Management.

UNIT-III

Computer Arithmetic - ALU, Integer Representation, Integer Arithmetic, Floating - Point Representation, Floating - Point Arithmetic Instruction Sets: Characteristics and Functions -Machine Instruction Characteristics, Types of operands, Types of Operations, Assembly Language. Instruction Sets - Addressing, Instruction Formats.

UNIT-IV

CPU Structure and Function - Processor Organization, Register Organization, The Instruction Cycle, Instruction Pipelining, The Pentium Processor, The PowerPC Processor. RISC - Instruction Execution Characteristics, The use of a Large Register File, Compiler Based Register Optimization, Reduced Instruction Set Architecture, RISC Pipelining, Motorola 88510, MIPS R4650, The RISC versus CISC Controversy.

UNIT-V

Superscalar Processors - Overview, Design Issues, PowerPC, Pentium Control Unit Operation - Micro-Operation, Control of the CPU, H/W Implementation. Microprogrammed Control - Basic Concepts, Microinstruction Sequencing, Microinstruction Execution, TI 8800, Applications of Microprogramming.

Text Book:

1. William Stallings, " Computer Organization and Architecture ", PHI , Fourth Edition, 1997.

References:

1.V.Carl Hamacher, ZvoKog G.Vranesic and Safwat G.Zaky, "COMPUTER ORGANIZATION", McGraw-Hill, ISE, 1984.

2. M.Morris Mano, "COMPUTER SYSTEMS ARCHITECTURE" ,PHI, Third Edition , 1997.

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.
9. Binary Search tree traversals (in-order, pre-order, and post-order) using Recursion.
10. Sorting-Quick sorting.

ALLIED II

PAPER III

FINANCIAL ACCOUNTING I

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

Introduction : Basic Accounting Concepts and Conventions - Groups interested in accounting - Accounting Equation - Journal - Ledger - Subsidiary Books - Trial Balance - Errors - Types - Rectification of Errors - Bank Reconciliation Statement.

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

Single Entry System : Definition - Salient features - Limitations - Differences between Single Entry System and Double Entry System - Methods.

SKILL BASED SUBJECT I

PAPER I

ENTERPRISE RESOURCE PLANNING

UNIT – I

Business function and Business process: Functional areas and Business Process - functional area of operations - Business process - Marketing Sales – supply chain management – Accounting and finance – Human Resource – Functional areas of information system – The development of ERP system SAP R/3 – New directions in ERP – significance and benefits of ERP software and systems

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

Accounting in ERP : Accounting activities – using ERP for accounting Information – operational decision making problem – credit management – Industrial credit management in SAP ERP – product profitability analysis – Management reporting with ERP system – Document flow for customer Service

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

Introduction: History of Computer - Parts of Computer System – Hardware Devices – Software – Operating System – Examples of Operating systems – Computer Networking – Visual Editor

UNIT–II

Microsoft Work - Microsoft Excel – Microsoft PowerPoint – Microsoft Access

UNIT–III

Introduction to Multimedia – Images – Sound -Video Desktop Publishing Basics – Page layout Programs – Text Generation – Graphics for DTP - Print Production – Data Communication – Computer Networking Basics – Local Area Networking Technology and Networking Topology –Wide Area Networking Technology and Routing – Protocols and Layering – Networking Devices.

UNIT–IV

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

UNIT–V

Information System – Management Information concepts – Planning Issues and the MIS - Organizing Issues and the MIS - Control Issues and the MIS – Decision Support Systems - Programming languages - Low Level languages Basics – Data Objects, Variables and Constants – Data Types – Tamil Word Processors – Tamil Web Browsers and Web Pages- Tamil E-Mail

References

1. Sanjay Saxsena, "A First Course in Computer", Vikas Publishing House, 2000

2. Ron Mansfield, "Working in Microsoft Office",Tata Mcgraw Hill, 1997

3. Linda Tway, Sapphiro Pacific Lajolla, "Multimedia in Action", Academic Press,1995

4. Neil randal "Teach yourself the internet in a week", Prentice Hall of India, Second Edition, 1996.

IV SEMESTER

PAPER VI

COMPUTER NETWORKS

UNIT-I

Computer networks – Network hardware- Network software- Protocol Hierarchies – Layering – Interfaces, services, primitives – OSI reference Model – TCP/IP reference model – physical layer – transmission media - Wireless transmission – switching.

UNIT – II

Data link layer : services of DLL – framing – flow control – error control – Error detection codes – Error correction codes – DLL protocol – stop and Wait protocol –sliding window protocol - HDLC – DLL in the internet

UNIT-III

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

Algorithm – congestion control – general principle of congestion control Inter network routing – Network layer in the internet – IP protocol –IP address – subnets – internet control protocol

UNIT-IV

Transportation layer: services of transportation layer – addressing – Establishing and releasing connection – flow control – buffering –Multiplexing – the internet transportation protocol TCP and UDP –Model – connection management – TCP congestion control – UDP

UNIT-V

Application layer – DNS – name space – resource – records – name Servers - Email – architecture and services – user agent – message Format and transfer – USENET   implementation – WWW client and Server sides – locating information on the web

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

Information management - File concept - Access methods - Directory structure - allocation methods - free space management - disk scheduling.

UNIT-V

UNIX: Unix system - A Case Study.

Text Book

Abraham Silberschatz and P. B. Galvin - Operating system concepts - Addison Wesley Publication.

PAPER VIII

VISUAL PROGRAMMING

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

VB objects- Dialogue boxes-Common control-Menus-MDI forms-Testing-Debugging and Optimization -Working with Graphics.

UNIT V:

File and handling-File system control-File system objects.

Books for Study :

1. Gary Cornell - Visual Basic 6.0 From the ground up – Tata McGraw Hill – 1999
2. Noel Jerke – Visual Basic (The Complete Reference) – Tata McGraw Hill – 1999
3. Deitel& Deitel ,T.R. Nieto – Visual Basic 6 – Pearson Edition - 2005

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

ALLIED II

PAPER IV

FINANCIAL ACCOUNTING II

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

Hire Purchase System : Meaning and Legal Position - Accounting aspects - Default and Repossession - Hire Purchase Trading account.

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.

SKILL BASED SBJECT II
PAPER II
E-COMMERCE

UNIT-I

Electronic Commerce Framework, Traditional vs. Electronic business applications, the anatomy of E-commerce applications.

UNIT-II

Network infrastructure for E-Commerce - components of the I-way - Global information distribution networks - public policy issues shaping the I-way. The internet as a network infrastructure. The Business of the internet commercialization.

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.

Electronic Commerce catalogs, Document Management and digital libraries.

Text Book

1) R. Kalakota and A. B. Whinston, Frontiers of Electronic Commerce, Addison Wesley, 1996.

Reference Books

1) R.Kalakota and A.B.Whinston,Readings in Electronic Commerce, Addison Wesley, 1997.

2) David Kosiur, Understanding Electronic Commerce, Microsoft Press, 1997.

3) Soka, From EDI to Electronic Commerce , McGraw Hill, 1995.

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 mailsattaching 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

Purpose of Database - Overall System Structure - Entity Relationship Model - Mapping Constraints - Keys - E-R Diagrams.

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

Oracle - Introduction – SQL(DDL,DML, DCL Commands) – Integrity Constraints – PL/SQL – PL/SQL Block – procedure, function – Cursor management – Trigger – Exception Handling.

Text Books

1. Singh-Database systems: Concepts, Design & applications, Pearson Education.
2. Abraham Silberschatz, H.F.Korth And S.Sudarshan-Database System Concepts Mcgraw Hill Publication
3. Gerald V.Post - DBMS-Designing And Business Applications - Mcgraw Hill Publications
4. Michael Abbey And Michael.J.Corey-Oracle- A Beginners guide TMH

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 Fie 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 foregin 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*.50 and sell_price*1.50 for each

   row selected.

b) Select product_no, profit_percent, Sell_price where profit_per 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 a 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 salaryl. Use Cusor to update the employee salaries.

9.Create a table to contain the information about the voters in a particular constituency. Wrtie 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 particualr 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 Constrain   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)

2. **Data Mining** (Practical Machine Learning Tools and Techniques (Second Edition)

   Author : Ian H. Witten & Eibe Frank   **Publishers :** Morgan Kaufmann Publishers

   (An imprint of Elsevier)

3. **Data Warehousing , Data mining & OLAP** (Edition 2004) **Author :** Alex Benson,

   Stephen V. Smith **Publishers** : Tata McGraw – Hill

PAPER I.2

MICROPROCESSORS AND ITS APPLICATIONS

UNIT – I

Introduction to Micro Computers, Microprocessors and Assembly Languages – Micro Processor Architecture and its operations – 8085 MPU – 8085 Instruction Set and Classifications.

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

Counters and time delays – Hexadecimal counter – Modulo 10 counter – Pulse Timings for Flashing lights – Debugging Counter and Time delay program – stack – subroutine – conditional call and return instructions.

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

Interrupt – Implementing interrupts – Multiple Interrupt – 8085 – trap – problems on implementing 8085 interrupt – DMA Memory interfaces – RAM & ROM – I/O interface – Direct I/O - Memory Mapped I/O – Programmable Peripheral interface 8255

Books For Study:

1. R.S.Gaonkar, Microprocessor Architecture – Programming and Application with 8085/8080A, Wiley Eastern Limited, 1990.
2. A.Mathur, Introduction to Microprocessor, Third Edition, Tata McGrawHill Publishing Co.Ltd.,1993.

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.

MM Video : How video works - broadcast video standards - digital video fundamentals - digital video production and editing techniques - file formats.

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
2. Multimedia Making it Work - Tay Vaughen 6th edition - TMH

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

Classes - Objects - Constructors - Overloading method - Access Control - Static and fixed methods - Inner Classes - String Class - Inheritance - Overriding methods - Using super- Abstract class – Type Wrapper classes for primitive types- Autoboxing and Auto Unboxing – Recursion.

UNIT- III

GUI components – Common GUI Event types and Listener Interfaces-JoptionPane – JLabel, JTextfield, JButton,JCheckBox,JTextarea, JComboBox, JList, JPannel – Mouse Event Handling - Adapter Classes- Key Event Handling.

UNIT- IV

Layout Managers – Flowlayout, Borderlayout, Gridlayout - Graphics and Java 2D – Graphics contexts and Graphics objects – Color control – Font Control – Drawing Lines, Rectangles and Ovals – JSlider – Using menus with Frames.

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

1. Programming in Java – 2nd Edition by C.Muthu, TMH Publication
2. Java How to Program by Deitel & Deitel - 6th Edition- PHI Publication 2005..

PAPER VIII

PROJECT & VIVA-VOCE

- 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 it's 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 sanie the next time when the user visits the site informing him that he has accessed the sitefor 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 ASPNET controls.

ELECTIVE II
(to choose 1 out of the given 2)
PAPER II.1
COMPUTER GRAPHICS

UNIT-I

Introduction to computer Graphics - Video display devices- Raster scan Systems - Random Scan Systems - Interactive input devices - Hard copy devices - Graphics software - Output primitives - line drawing algorithms - initializing lines - line function - circle Generating algorithms.

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

1. D.Hearn and M.P.Baker - Computer Graphics (C version) - Pearson Education.

2. W.M. Newman and RF.Sproull - Principles of Interactive Computer Graphics - McGraw Hill International Edition - 1979.

PAPER II.2
CLIENT/ SERVER TECHNOLOGY

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

1. Beth gold-Bernstein, David Marca, 'Designing enterprise client/server systems', phi-1998.

2. Thomas S Ligon, 'Client/Server communications', Mcgraw Hill series on client/server computing-1997.

3. Robert Orfali, Dan Harley, Jeri Edward, 'The essential client/server survival guide', second edition, Galgotia 1997.

ELECTIVE III

(to choose 1 out of the given 2)

PAPER III.1

SOFTWARE ENGINEERING

UNIT-I

Introduction to Software Engineering : Definitions - Size Factors - Quality and Productivity Factors - Managerial Issues - **Planning a Software Project** : Defining the Problem - Goals and Requirements - Solution Strategy - **Planning the Development Process :** Various Models - Planning an Organizational Structure - Planning Activities.

UNIT- II

Software cost estimation : Introduction - Software Cost Factors - Software Cost Estimation Techniques - Stating Level estimation - Estimating Software Maintenance Costs Software Requirements Definition - Software Requirements Specification - Specification Techniques - Languages and Processors for Requirements.

UNIT-III

Software design - Design concepts - Modules And Modularization Criteria - Design Notations - Design Techniques - Design Considerations - Real Time and Distributed System Design - Test Plans - Milestones, Walkthroughs and Inspections - Design Guidelines Implementation Issues : Structure Loading Techniques - Coding Style - Standards And Guidelines - Documentation Guidelines.

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

Unit - Testing And Debugging - System Testing - Formal Verification Software Maintenance - Maintainability - Managerial Aspect Of Software Maintenance - Configuration Management - Source Code Metrics - Other Maintenance Tools And Techniques.

Text Books

1. Software Engineering Concepts 1997 Edition

    Author : RICHARD FAIRLEY Publishers : TATA Mc GRAW-Hill Edition.

2. Software Engineering   VI   Edition,   Author : ROGER S . PRESSMAN Publishers   TATA McGRAW - HILL International Edition.

3. Software Engineering   Programs Documentation Operating procedures

4. Author : K.K. AGGARWAL & YOGESH SINGH Publishers : NEW AGE INTERNATIONAL PUBLISHERS

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

Object Oriented System Development Ali Bahrami Mc Graw Hill Publication.

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

ASP. NET Language Structure - Page Structure - Page event, Properties & Compiler Directives. HTML server controls - Anchor, Tables, Forms, Files. Basic Web server Controls- L.able, Textbox, Button, Image, Links, Check & Radio button, Hyperlink. Data List Web Server Controls - Check box list, Radio button list, Drop down list, List box, Data grid, Repeater.

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

1. Deitel & Deitel ,internet & world wide web How to program, Pearson Education

2. I. Bayross, Web Enable Commercial Application Development Using HTML, DHTML, Javascript, Pen CGI, BPB Publications, 2000

3. J. Jaworski, Mastering Javascript, BPB Publications, 1999

4. T. A. Powell, Complete Reference HTML (Third Edition),TMH, 2002

5. G. Buczek, ASP.NET Developers Guide, TMH, 2002

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