

THIRUVALLUVAR UNIVERSITY
BACHELOR OF SCIENCE
DEGREE COURSE
B.Sc. SOFTWARE COMPUTER SCIENCE
UNDER CBCS
 [with effect from 2009-2010]

The Course of Study and the Scheme of Examinations

Year/ Semester	Part	Subject	Paper	Title of the Paper	Ins. Hrs/ Week	Credit	Exam Hrs	Max. Marks		
								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	Introduction to Information Technology	5	4	3	25	75	100
	III	Core Practical	Practical	Office Automation and C Lab	4	2	3	-	-	-
	III	Allied I	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 I	Office Automation and C Lab	4	2	3	40	60	100
	III	Allied I	Paper II	Mathematical Foundation II	7	5	3	25	75	100
	IV			Value Education	2	2	2	-	50	50
II Year III Semester	I	Language	Paper III		6	3	3	25	75	100
	II	English	Paper III		6	3	3	25	75	100
	III	Core	Paper III	Software Engineering	3	3	3	25	75	100
	III	Core Practical	Practical II	C++ Lab	3	3	2	20	30	50
	III	Allied II	Paper III	Quantitative Techniques I	4	4	3	25	75	100
	III	Allied Practical			3	-	-	-	-	-
	IV	Skill Based Elective I	Paper I	Object oriented programming using C++	3	3	3	25	75	100
		Non-Major	Paper I	Office Automation Tools	2	2	3	25	75	100

B.Sc. Software Computer Science : Syllabus (CBCS)

Year/ Semester	Part	Subject	Paper	Title of the Paper	Ins. Hrs/ Week	Credit	Exam Hrs	Max. Marks			
								IA	Uni. Exam.	Total	
		Elective I									
II Year IV Semester	I	Language	Paper IV		6	3	3	25	75	100	
	II	English	Paper IV		6	3	3	25	75	100	
	III	Core	Paper IV	Object oriented analysis and design	3	3	3	25	75	100	
	III	Core Practical	Practical III	Data structures using C++ lab	3	3	3	20	30	50	
	III	Allied II	Paper IV	Quantitative Techniques II	4	4	3	25	75	100	
	III	Allied Practical		Quantitative Techniques	3	2	3	20	30	50	
	IV	Skill Based Elective II	Paper II	Fundamentals of Data Structures	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 V	Database Management Systems	6	5	3	25	75	100	
	III	Core	Paper VI	Java Programming	6	5	3	25	75	100	
	III	Core Practical	Practical IV	Java Programming Lab	5	5	3	20	30	50	
	III	Core Practical	Practical V	RDBMS lab	5	5	3	20	30	50	
			Elective I	Paper I	(to choose 1 out of 2) 1. Data Mining 2. Computer Graphics	5	5	3	25	75	100
	IV	Skill Based Elective III	Paper III	Operating Systems	3	3	3	25	75	100	
III Year VI Semester	III	Core	Paper VII	Web Technology	4	4	3	25	75	100	
	III	Core Practical	Practical VI	Web Technology Lab	4	4	3	20	30	50	
	III	Core Practical	Practical VII	Visual Programming Lab	4	3	3	20	30	50	
	III	Core	Paper VIII	Project with Viva Voce	5	5	3	25	75	100	
			Elective II	Paper II	(to choose 1 out of 2) 1. Software Project Management 2. Client Server Technology	5	5	3	25	75	100
			Elective III	Paper III	(to choose 1 out of 2) 1. Electronic Commerce 2. Multimedia	5	5	3	25	75	100
	IV	Skill Based Elective IV		Visual Programming	3	3	3	25	75	100	

B.Sc. Software Computer Science : Syllabus (CBCS)

Year/ Semester	Part	Subject	Paper	Title of the Paper	Ins. Hrs/ Week	Credit	Exam Hrs	Max. Marks		
								IA	Uni. Exam.	Total
	V	Extension Activities			-	1	-	-	-	50
				Total	180	140				3550

THIRUVALLUVAR UNIVERSITY

B.Sc. SOFTWARE COMPUTER SCIENCE

SYLLABUS

UNDER CBCS

[with effect from 2009-2010]

I SEMESTER

PAPER I

INTRODUCTION TO INFORMATION TECHNOLOGY

UNIT-I

Introduction : History of computer - Parts of Computer System - Hardware devices - Software - operating systems - Examples of operating system - Computer Networking - Visual Editor.

UNIT-II

Word processing with Ms Word - Starting MS word - Ms Environment - Working with word document - working with text - Working with tables - checking spelling and grammar - printing document. Spread sheets and MS Excel - starting MS excel - MS Excel Environment - Working with Excel work book - Working with worksheet formulas and functions. Inserting charts and printing in Excel.

UNIT-III

Making presentation with MS Power Point - starting MS Power Point - MS Power Point Environment - Working with Power Point - Working with different views - Designing presentations - printing in Power Point.

UNIT-IV

Introduction to Multimedia - Images - Sound - Video Desktop Publishing Basics - Page Layout Program - Text generation - Graphics for DTP. Data Communication - Computer networking Basics - LAN Technology & Routing - Protocol and Layering. Networking Devices.

UNIT-V

Introduction Systems - Management Information concepts - Planning views and the MIS - Organizing views and the MIS - control views and the MIS - Decision support Systems Electronic Commerce - types - advantages and disadvantages - Electronic data interchange - How EDI Works - EDI benefits and limitations.

Reference Books:

1. Sanjay Saxsena, "A First Course in Computer", Vikas publishing House, 2000.
2. Sanjay Saxsena, "MS office 2000", Vikas publishing House, 2000
3. Linda Tway, Sapphiro pacific Lajolla, "Multimedia in Action", Academic press, 1995.

CORE PRACTICAL I
OFFICE AUTOMATION AND 'C' LAB

OFFICE AUTOMATION LAB:

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 Clipart
- 5.1 Working with Clipart
- 5.2 Applying Transition and animation effects
6. Run and Slide Show

C Lab:

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. Reverse a string & check for palindrome

III. Recursion

1. ${}^n P_r, {}^n C_r$
2. GCD of two number

IV. Sorting and Searching

1. Bubble Sort
2. Linear Search

V. Structures and Pointers

1. Preparation of Mark Sheet
2. Demonstration of pointer Arithmetic

VI. File Operation

1. File Copying
2. Usage of command line arguments

ALLIED I

PAPER I

MATHEMATICAL FOUNDATIONS I

Objectives

To know about

Logical operators, validity of arguments, set theory and set operations, relations and functions, binary 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, venn diagram, 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,

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

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 - Conics (Parabola, Ellipse and Hyperbola).

Reference Books

1. P.R.Vittal, Mathematical Foundations - Margham Publication, Chennai.
2. U. Rizwan, Mathematical Foundation - SciTech, Chennai
3. V.Sundaram & Others, Discrete 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 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 String. Structures - 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

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

Reference Books:

1. B.W. Kernighan and D.M.Ritchie, 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
OFFICE AUTOMATION AND 'C' LAB

OFFICE AUTOMATION LAB:

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1. Creation of Worksheet and Entering Information
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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-Hermitian, 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

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

integrations using simple substitutions integrations involving trigonometric functions of the form

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

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 curves, (ii) Volume of solid of revolution.

UNIT-V: ANALYTICAL GEOMETRY OF THREE DIMENSION

Planes, straight lines, spheres and cones (simple problems any)

Reference Books

1. P.R.Vittal, Mathematical Foundations - Margham Publication, Chennai.
2. U. Rizwan, Mathematical Foundation - SciTech, Chennai
3. V.Sundaram & Others, Discrete Mathematical Foundation - A.P.Publication, Sirkali.
4. P.Duraipandian & Others, Analytical Geometry 3 Dimension - Emerald publication 1992 Reprint.
5. Manicavachagom pillay & Natarajan. Analytical Geometry part II - three Dimension - S.Viswanathan (printers & publication) Pvt 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.1millionpapers.com

<http://militaryfinance.umuc.edu/education/edu-network.html/>

III SEMESTER

PAPER III

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

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

CORE PRACTICAL II

C++ LAB

1. Program to implement classes, create object and member functions, constructors, nested classes.
2. Program to implement the concept of function overloading
3. Program to implement the concept of operator overloading (Unary and Binary operators)
4. Program to implement the concept of Inheritance (Single, multiple, multilevel Inheritance)
5. Program to implement static and dynamic polymorphism
6. Program to implement user defined manipulators
7. Program to implement friend functions
8. Program to implement file handling concepts.

ALLIED II

PAPER III

QUANTITATIVE TECHNIQUES I

UNIT-I

Operation Research (O.R.) - Nature and significance of Operation Research - Various models - Application and scope of Operation Research.

UNIT-II

Linear Programming Problem (L.P.P.) - characteristic of Linear Programming Problem and its formulation - graphical method of solving Linear Programming Problem - simplex method of solving Linear Programming Problem.

UNIT-III

Linear Programming Problem - Big M. Method - Two phase method Duality

1. North west corner
2. Least cost
3. Vogel's

UNIT-IV

Transportation Problem - Methods of finding Initial Basic Feasible Solution - Optimal Solution - simple problem.

UNIT-V

Assignment Problem - Balanced and unbalanced Assignment Problems - Optimal solution - simple problems.

Text Book

Kanti swarup Manmohan and Gupta - Operation Research chand and sons, New Delhi.

Reference:

1. J.K.Sharma [2003] Operation Research - Theory and its application, Mac Millan.
2. Taha. H.A. O.R. An Introduction PHI
3. P.K. Gupta and Hira, Problems in O.R. S.Chand and company Ltd., New Delhi.

SKILL BASED SUBJECT I

PAPER I

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

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

NON MAJOR ELECTIVE I

PAPER I

OFFICE AUTOMATION TOOLS

UNIT-I

Ms word: Starting word - Parts of word window - formatting features - menus, commands, Toolbars - File menu, Edit, view, insert, Format and tool menus - Working with text, tables - checking spelling and Grammars.

UNIT-II

Mail merge concept - creating main document, data source, Adding fields - Remarks fields - Macros - Creating templates and working with templates.

UNIT-III

MS - Excel: Excel Basics - Creating Work Sheets - Formulas - Functions - Charts - Coping Data, between worksheets - Case studies pay bill , profit and loss accounts etc.

UNIT-IV

Power point - Making presentation with Ms power points - working with power point - organization chart - inserting chart from excel.

UNIT-V

Ms-Access: Introduction - creating a new Database - saving the database - Forms - Reports.

IV SEMESTER

PAPER IV

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.

CORE PRACTICAL III

DATA STRUCTURES USING C++ LAB

1. Program to implement stack operations using Arrays and pointers.
2. Program to implements infix expression to postfix expression conversion
3. Program to implement queue operations using Arrays and pointers
4. Program to implement singly linked list operations
5. Program to implement Doubly linked list operations
6. Binary Search tree traversals (in-order, Pre-order, Post-order) using recursion
7. Graph traversals - BFS and DFS
8. Program to implement linear and Binary Search
9. Sorting Techniques - Insertion, Bubble and quick sort.

ALLIED II

PAPER IV

QUANTITATIVE TECHNIQUES II

UNIT-I:

Network scheduling by CPM/PERT - project network diagram - Critical path method (CPM) - PERT Computations.

UNIT-II:

Inventory models - EOQ model (a) Uniform demand rate infinite production rate with no shortages (b) Uniform demand rate finite production rate with no shortages - Inventory control with Price Breaks.

UNIT-III:

Sequencing problem - n jobs through 2 machines, n jobs through 3 machines - two jobs through m machines - n jobs through m machines.

UNIT-IV:

Game Theory - Two person zero sum game - pure and mixed strategies - saddle point - domain and rule - graphical solution of rectangle games.

UNIT-V:

Replacement problem - introduction - replacement of items that deteriorate with time - replacement of items that fail completely.

Recommended Text

Gupta P.K. and Hira D.S. (2000) *Problems in Operations Research*, S.Chand & Co. Delhi

Reference Books

1. J.K.Sharma, [2001] *Operations Research: Theory and Applications*, Macmillan, Delhi
2. Kanti Swaroop, Gupta P.K. and Manmohan, [1999] *Operation Research*, Sultan Chand & Sons., Delhi.
3. V.K.Kapoor [1989] *Operations Research*, sultan Chand & sons.
4. Ravindran A., Philips D.T. and Solberg J.J., [1987] *Operations research*, John Wiley & Sons, New York.
5. Taha H.A. [2003] *Operations Research*, Macmillan Publishing Company, New York.
6. P.R.Vittal [2003] *Operations Research*, Margham Publications, Chennai.
7. S.J.Venkatesan, *Operations Research*, J.S. Publishers, Cheyyar-604 407.
8. Arumugam & Issac, *Operation research - Vol. - I*, New Gamma Pub., House. Palayamkottai.

ALLIED PRACTICAL
QUANTITATIVE TECHNIQUES

1. Solving Linear Programming Problem by graphical methods.
2. Solving Linear Programming Problem by simplex methods (Two variables three and more variables)
3. Solving Linear Programming Problem by Big M. methods
4. Solving Linear Programming Problem by Two phase method
5. Solving Linear Programming Problem by Duality
6. Solving Transportation problems (Balanced unbalanced)
7. Solving Assignment Problems (Balanced unbalanced)
8. Solving job sequencing Problems
9. Solving Problems related to game theory

SKILL BASED SUBJECT II

PAPER II

FUNDAMENTALS OF DATA STRUCTURES

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

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

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

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

Book for Reference

The Internet- Complete Reference Harley hahn, Tata McGraw Hill

V SEMESTER

PAPER V

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 - Triggers - 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 VI

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- Auto boxing and Auto Unboxing - Recursion.

UNIT- III

GUI components - Common GUI Event types and Listener Interfaces- JoptionPane - JLabel, Jtextfield, Jbutton,Jcheckbox,JtextArea, JComboBox, JList, Jpanel - 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..

PRACTICAL IV

JAVA PROGRAMMING 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 V

DATABASE MANAGEMENT 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 $sell_price * .50$ 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 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.

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.

UNIT- III

Data Warehouse OLAP Technology An overview - Data Warehouse Multidimensional Data Model Data Warehouse Architecture Data Warehouse Implementation.

UNIT-IV

Mining - Frequent Patterns Associations Correlations - Basic Concepts Road Map Efficient Scalable Frequent Tamest Mining methods Mining - Various Kinds of Association rules.

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
Author : Jiawei Han and Micheline Kamber

Publishers : Morgan Kaufmann Publishers [An imprint of Elsevier]

[Chapter 1 : 1.1 -1.9, 2 : 2.1 - 2.5 , 3: 3.1-3.4 , 4: 5.1 - 5.3 5 : 11.1 - 11.6]

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 [II 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

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.

SKILL BASED SUBJECT III

PAPER III

OPERATING SYSTEMS

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.

VI SEMESTER
PAPER VII
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- Label, 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 Enabled Commercial Application Development Using HTML, DHTML, Javascript, Perl 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

PRACTICAL VI

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 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 ASPNET controls.

PRACTICAL VII

VISUAL PROGRAMMING Lab

1. Building simple application
2. Working with Intrinsic controls and ActiveX controls
3. Application with multiple forms
4. Application with dialogs
5. Application with menus
6. Application using data control
7. Application using format dialogs
8. Drag and Drop events
9. Database Management
10. Creating ActiveX controls

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.

ELECTIVE II

(to choose 1 out of the given 2)

PAPER II.1

SOFTWARE PROJECT MANAGEMENT

UNIT-I: Conventional Software Management:

The waterfall model, Conventional software management performance. Evolution of Software Economics. Software Economics, Pragmatic software cost estimation.

UNIT-II: Improving Software Economics:

Reducing software product size, improving software processes, improving team effectiveness, improving Automation, achieving required quality, Peer inspections.

Life cycle phases: Engineering and production stages, inception, elaboration, construction, transition phases.

UNIT-III: Model based software Architectures:

A management and technical perspective. Work Flows of the process : Software process workflows, iteration workflows.

UNIT-IV: Check points of the process:

Major milestones, minor milestones, periodic status assessments. Iterative process planning. Work breakdown structures, planning guidelines, cost and schedule estimating, Iteration planning process pragmatic planning.

Project organizations and Responsibilities. Line-of-business organizations, project organizations, evolution of organizations.

UNIT-V: Process Automation:

Automation building blocks, the project environment. Project control and process Instrumentation. The seven core metrics, management indicators, quality indicators, life cycle expectations, pragmatic software metrics, metrics Automation.

Books for Study:

Title: Software Project Management

Author : Walker Royce

Publication : Pearson Education

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

ELECTRONIC 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

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.

PAPER III.2

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

SKILL BASED SUBJECT IV

PAPER IV

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