ALLUVAR UNIVERSITY

BACHELOR OF COMPUTER APPLICATIONS

DEGREE COURSE

CBCS PATTERN

(With effect from 2012-2013)

The Course of Study and the Scheme of Examinations

S.No.	Part	Study Components / Course Title		Ins. hrs /week	Credit	Title of the Paper	Maximum Marks		
SEMESTER I							CIA	Uni. Exam	Total
1	I	Language	Paper-1	6	4	Tamil/Other Languages	25	75	100
2	II	English	Paper-1	6	4	English	25	75	100
3	III	Core Theory	Paper-1	6	5	Digital Logic &Microprocessor	25	75	100
4	IIII	Core Practical	Practical- 1	3	0	PC Software Lab	0	0	0
5	III	ALLIED-1	Paper-1	7	4	Mathematical Foundations - I	25	75	100
6	IV	Environ. Studies		2	2	Environmental Science	10	40	50
				30	19		110	340	450
SEMESTER II							CIA	Uni. Exam	Total
7	I	Language	Paper-2	6	4	Tamil/Other Languages	25	75	100
8	II	English	Paper-2	4	4	English	25	75	100
9	III	Core Theory	Paper-2	6	4	Programming in C	25	75	100
10	III	Core Practical	Practical-1	0	3	PC Software Lab	40	60	100
11	III	Core Practical	Practical- 2	3	3	Programming in C Lab	40	60	100
12	III	ALLIED-1	Paper-2	7	6	Mathematical Foundations - II	25	75	100
13	IV	Value Education		2	2	Value Education	10	40	50
14	IV	Soft Skill		2	1	Soft Skill	10	40	50
				30	27		200	500	700
SEMESTER III							CIA	Uni. Exam	Total
15	III	Core Theory	Paper-3	4	3	Programming in C++	25	75	100
16	III	Core Theory	Paper-4	5	3	Data Structure	25	75	100
17	III	Core Theory	Paper-5	5	3	Computer Networks	25	75	100
18	III	Core Practical	Practical- 3	4	3	C++ and Data Structure Lab	40	60	100
19	III	ALLIED-2	Paper-3	7	4	Financial Accounting - I	25	75	100

				Hours / Week	Credit	Title of the Paper	Maximum Marks		
20	IV	Skill based Subject	Paper-1	3	3	Management Information Systems	15	60	75
21	IV	Non-major elective	Paper-1	2	2	Introduction to Information Technology	10	40	50
				30	21		165	460	625

							CIA	Uni. Exam	Total
		SEMESTER IV							
22	III	Core Theory	Paper-6	5	4	Java Programming	25	75	100
23	III	Core Theory	Paper-7	4	3	System analysis and design	25	75	100
24	III	Core Theory	Paper-8	5	3	E-Commerce	25	75	100
25	III	Core Practical	Practical- 4	4	3	Java Lab	40	60	100
26	III	ALLIED-2	Paper-4	7	6	Financial Accounting - II	25	75	100
27	IV	Skill based Subject	Paper-2	3	3	Mobile Computing	15	60	75
28	IV	Non-major elective	Paper-2	2	2	Internet and its applications	10	40	50
				30	24		165	460	625

							CIA	Uni. Exam	Total
		SEMESTER V							
29	III	Core Theory	Paper-9	6	5	Database Management Systems	25	75	100
30	III	Core Theory	Paper-10	6	5	Visual Programming	25	75	100
31	III	Core Practical	Practical- 5	4	3	RDBMS	40	60	100
32	III	Core Practical	Practical-6	4	3	Visual Programming Lab	40	60	100
34	III		Demo	4	0	Internet	0	0	0
35	III	Elective	Paper-1	3	3	(**to choose any 1 out of 3**) A. Operating Systems B. Software Engineering C. Design of Algorithms	25	75	100
36	IV	Skill based Subject	Paper-3	3	3	Cryptography	15	60	75
				30	22		170	405	575

							CIA	Uni. Exam	Total
		SEMESTER VI							
37	III	Core Theory	Paper-11	7	6	Open Source Software	25	75	100
38	III	Core Theory	Paper-12	6	5	Multimedia	25	75	100
39	III	Core Practical	Practical- 7	4	3	Open Source Software Lab	40	60	100

				Hours /Week	Credit	Title of the Paper	Maximum Marks		
40	III	Practical	Practical- 8	4	3	Multimedia Lab	40	60	100
42	III	Elective	Paper-2	3	3	**(to choose any 1 out of 3)** A. Data Communication Networks B. Artificial Intelligence C. Software Testing	25	75	100
43	III	Elective	Paper-2	3	3	**(to choose any 1 out of 3)** A. Data Warehousing & Data Mining B. Digital Image Processing C. Software Project Management	25	75	100
44	IV	Skill based Subject	Paper-4	3	3	Internet and its applications	15	60	75
45	V	Extension Activities		0	1	Extension Activities	50	-	50
		TOTAL		**30**	**27**		**245**	**245**	**725**

Part	Subject	Papers	Credit	Total credits	Marks	Total Marks
Part I	Languages	2	4	8	100	200
Part II	English	2	4	8	100	200
Part III	Allied (Odd Semester)	2	4	8	100	200
	Allied (Even Semester)	2	6	12	100	200
	Electives	3	3	9	100	300
	Core	12	(3-7)	49	100	1200
	Core Practical	8	(2-5)	24	100	800
Part IV	Environmental Science	1	2	2	50	50
	Soft Skill	1	1	1	50	50
	Value Education	1	2	2	50	50
	Lang. & Others/NME	2	2	4	50	100
	Skill Based	4	3	12	75	300
Part V	Extension	1	1	1	50	50
	Total	**40**		**140**		**3700**

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LLUVAR UNIVERSITY

BACHELOR OF COMPUTER APPLICATIONS

SYLLABUS
CBCS PATTERN
(With effect from 2012-2013)

SEMESTER I

PAPER - 1

DIGITAL LOGIC AND MICROPROCESSOR

Unit-I: Binary Systems:

Digital Computers and Digital Systems - Binary Numbers - Number Base Conversion - Octal and Hexadecimal Numbers - Compliments - Binary Codes - 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 - Digital Logic Gates.

Unit-III: Simplification of Boolean Functions

The Map Method - Two and Three Variable Maps - Four Variable Map - Product of Sums Simplifications - Don't Care Conditions.

Unit-IV: Combinational Logic

Adders - Subtractors - Binary Adder – Encoder - Decoders – multiplexure and demultiplexture - Flip Flops - Registers - Shift registers-Ripple counters- Synchronous Counters - The Memory Unit.

Microprocessors and Assembly Languages – History of Micro Processor - Micro Processor Architecture and its operations – 8085 MP.

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.Digital Logic Design – Lloyd

2. R.S.Gaonkar, Microprocessor Architecture – Programming and Application with 8085/8080A, Wiley Eastern Limited, 1990.

3. A.Mathur, Introduction to Microprocessor, Third Edition, Tata McGrawHill Publishing Co.Ltd.,1993.

RE PRACTICAL - 1

(WORD, EXCEL AND POWER POINT)

WORD

1. Prepare a resume.
2. Prepare an application for a job.
3. Prepare an advertisement for a product
4. Prepare a letter head
5. Prepare a leave letter
6. From Newspaper "appointment pages" take one Advt and type
7. Mail Merge Concept
8. Copying Text and Picture From Excel
9. Creation of Tables, Formatting Tables
10. Inserting Symbols in Documents

EXCEL

1. Aligning , Editing Data in Cell
2. Excel Function (Date , Time, Statistical, Mathematical, Financial Functions)
3. Changing of Column Width and Row Height (Column and Range of Column)
4. Moving, copying, Inserting and Deleting Rows and Columns
5. Creation of Charts.
6. Import information
7. Export   information

POWER POINT

1. Create slides with Headers and footers.
2. Create a slide show with minimum 5 slides to advertise a product.
3. Create slide s with different fonts and bullets.
4. Create a slide show with animation effect.
5. Create a organization chart for a college.

ALLIED 1

PAPER - 1

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,

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

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.

...YTICAL 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.

SEMESTER II

PAPER – 2

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 –
Function within a function-Recursion.

UNIT-IV

Storage Classes - Automatic, External, Static, Register Variables .Arrays - Defining and Processing - Passing arrays to functions - Multi-dimension arrays - Structures - User defined data types.-unions-bitwise operators.

UNIT-V

Pointers - Declarations - Passing pointers to Functions - Operation on Pointers - Pointer and Arrays - 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.
4. M.T.Somashekara ,Problem Solving in C, PHI,2009.

CORE PRACTICAL - 2

PROGRAMMING IN C LAB

PROGRAMMING IN C LAB

1. Summation of Series : Sin(x) (Compare with built in functions)

2. Summation of Series Cos(x) (Compare with built in functions)

3. Counting the no. of vowels, consonants, words, white spaces in a line of text and array of lines

4. Reverse a string & check for palindrome.

5. ^nP_r, ^nC_r in a single program.

6. GCD of two number

7. Bubble Sort

8. Linear Search

9. Demonstration of pointer Arithmetic

10. Finding the maximum number in a set

11. Finding the minimum number in a set

12. Merge two arrays of integers both with their elements in ascending order into a single ordered array.

ALLIED - 1

PAPER - 2

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

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

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

THREE DIMENSIONS

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.

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

SEMESTER III

PAPER - 3

PROGRAMMING IN C++

UNIT-I

Principles of object oriented programming (oop)-Evolution of C++ -key concepts of oop .
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 - Virtual Functions and Polymorphism

UNIT-V

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

Text Books

1. Ashok N.Kamthane, Object Oriented Programming with ANSI & Turbo C ++, Pearson Education, 2006
2. Bala gurusamy, c++ programming, TMH.

PAPER - 4

DATA STRUCTURE

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.

UNIT-III

Recursion, Queue- operations - Singly Linked List - Operations, Application - Representation of a Polynomial, Polynomial Addition. Doubly Linked List - Operations.

UNIT-IV

Trees: Binary Trees - Operations - Recursive Tree Traversals.

UNIT-V

Graph - Definition, Types of Graphs, Graph Traversal - DFS and BFS.
Sorting by selection – Sorting by exchange (Bubble) – Sorting by insertion – Linear Search - Binary Search.

Text Books

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

PAPER - 5

[COM]PUTER 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

RE PRACTICAL - 3

DATA STRUCTURE LAB

1. Program to implement classes, object, constructors and member functions for calculating area and perimeter of a circle.

2. Program to implement the concept of function overloading to compute the volume of a geometric primitive (eg: cylinder, sphere etc)

3. Program to implement the concept of operator over loading to compute addition and subtraction of matrices.

4. Program to incorporate the concept of single, multiple inheritance.

5. Program to create, write read a sequential file using error handling functions.

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. Polynomial addition.

ALLIED 2

PAPER - 3

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.

LL BASED SUBJECT

PAPER - 1

MANAGEMENT INFORMATION SYSTEMS

UNIT I:

Management Information: Meaning of Information – Attributes of information – Information needs of managers – Web databases – Data warehousing – Knowledge management – Information system for decision making.

UNIT II:

Types of information systems: Transaction processing systems – Office automation systems – Decision support systems – Executive support systems – Management information systems: Evolution of MIS – Computers and MIS.

UNIT III:

System analysis – System planning and the mutual investigation – System design – The process and stages of system design - Input/Output forms design – File organization – System implementation.

UNIT IV:

Management information needs and communication links for marketing system, Production system, Accounting system, Manufacturing system, Inventory control system and budgetary control system – IS organization – Top managements responsibility – Data processing group's responsibility.

UNIT V:

Development, maintenances of MIS – Operation of manual information system, Role of computer in MIS – Database concepts, Expert systems – System audit.

Text books:

1. Effy oz, "Management Information Systems", Second edition, Thomson Learning Course Technology, 2002.

2. Jawadekar W.S, "Management Information Systems", Tata McGraw Hill Publishing Company Limited, 2002.

3. Kenneth.C Laudon and Jane P.Laudon, "Management Information Systems", Prentice Hall of India Ltd., 2002.

ra , "Management Information Systems",   Prentice

Reference Books:

1. David Knoenke(1989), "management information systems", Tata McGraw Hill, Delhi.

2. landon K.C. and Landon J.P(2001), "Management Information systems", MaxWell Macmillan publishing company.

3. Murdick Rose and Elaggett Information System for Modern Management, Prentice Hall.

4. Robert Schultheis, Mary Sumner, "Management Information Systems" – The Manager's View, Fourth edition, Tata McGraw Hill Edition, 1999.

N-MAJOR ELECTIVE

PAPER – 1

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 Word - 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.

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.

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.

5. ITL Edn Solutions,"Introduction to Computer Science", Pearson Education.

SEMESTER IV

PAPER – 6

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, JPannel. – Mouse Event Handling - Adapter Classes- Key Event Handling.

UNIT- IV

Mouse Event Handling - Adapter Classes- Key Event Handling. Layout Managers – FlowLayout, BorderLayout, GridLayout.- 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.- file streams-Sequential file , Random file.

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 - 7

SYSTEM ANALYSIS AND DESIGN

UNIT I:

Introduction: The systems concept- Elements of a system – Types of systems – System development life cycle – Feasibility study – System analyst – Role of system analyst – Tools for systems development – Preliminary investigation.

UNIT II:

System analysis: Tools for determining systems requirements – Basic requirements – User transaction - User decision – Organization wide requirements – Fact finding techniques – Tools for documentation procedures and decisions – Decision tree – Decision table – Structured analysis – Developing data flow diagrams - Data dictionary – Computer aided system tools.

UNIT III:

System design: The analysis to design transition – Specifying application requirements – Objectives in designing an information systems – Design of computer output- Types of output – Design of input and control – Capturing data for input.

UNIT IV:

System design: Design of on-line dialogues – Design of files and use of auxiliary storage devices – Basic file terminology – Types of files – Methods of file organization – Magnetic tape – Magnetic disk.

UNIT V:

Implementation: System engineering and Quality assurance – Design objectives – Program structure charts – Design of software – Structured flowcharts – HIPO – Managing system implementation.

1. Elias M. Awad, "System Analysis and Design", Second edition, Galgotia Publications (P) Ltd., 1999. (Unit I)

2. James A. Senn, "Analysis and Design of Information Systems", Second edition, McGraw Hill Publishing Company, 1989.

Reference Books:

1. Lee, "Introducing System Analysis and Design", Volume I & II, Galgotia Publications (P) Ltd.,

2. I.T. Hawryszkiewycz, "Introduction to System Analysis and Design", Third edition, Prentice Hall India.

PAPER – 8

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.

PRACTICAL – 4

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)

ALLIED - 2

PAPER - 4

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.

LL BASED SUBJECT
PAPER – 2

MOBILE COMPUTING

UNIT-I

Introduction- Applications-vehicles- Mobile and Wireless devices- History of wireless communications- Mobile Communication Market – A Simplified and reference model – Overview – Wireless Transmission – Signals – Antennas – Signal Propagation – Multiplexing – Modulation – Spread Spectrum.

UNIT-II

Medium Access Control – motivation for a MAC- SDMA – FDMA – TDMA – Comparison of S/T/F/ CDMA. – Telecommunication Systems –GSM – System Architecture – Protocols – DECT – TETRA.

UNIT-III

Satellite system – History – Applications – BASICS – GEO 139 – LEO 139 – MEO 140 – Routing – Localization – Handover – Examples – Broad cast Systems – Overview – Cyclic Repetition of data – Digital Video and Audio Broadcasting.

UNIT-IV

Mobile Network Layer – Mobile IP – Goals, assumptions- Entities and term logy – IP Packet Delivery – Tunneling and encapsulation – Optimization - Dynamic Host Configuration Protocol – ad hoc networks – Routing- Destination sequence distance vector – Dynamic source routing – Hierarchical algorithms – Alternative metrices.

UNIT-V:

Mobile Transport layer- Traditional TCP 292 – Congestion control 292 – Slow start 292 – Fast retransmit / fast recovery 293 – Implication on mobility 294- Indirect TCP – Snooping TCP – Mobile TCP – Fast retransmit / fast recovery – transmission / time-out freezing – selective retransmission – transaction oriented TCP – WAP.

TEXT BOOK:

1. JOCHEN SCHILER , "Mobile Communication", Addison Wesley, 2000. **REFERENCES:**
1. HONEYMAN P HUSTON L.B, "Communications and Consistency in Mobile File Systems", IEEE Personal communication 2(6), Dec 1996.
2. www.awl.com/cseng
3. www.dect.ch
 4. Biplob k Sikdar ,Sipra dasbit –Mobile Computing - Printice Hall India.

N-MAJOR ELECTIVE

PAPER – 2

INTERNET AND ITS APPLICATIONS

UNIT- I

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

UNIT – II

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

UNIT III

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

UNIT IV

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

UNIT V

E-marketing consumer tracking Electronic advertising search engine-CRM- credit card Payments- Digital cash – e wallets – smart card.

Textbook

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

Book for Reference

The Internet- Complete Reference Harley hahn, Tata McGraw hill

SEMESTER V

PAPER – 9

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 – 10

AL 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-Grid-Message boxes-Editing tools-Variables, data types.

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 – 5

RDBMS

Creation of a Database and performing various operations given below using a menu driven program. a. Insertion b. Deletion c. Modification d. Generating as simple report for the following:

1. Table creation and simple queries.
2. Constraints (Primary key, forien key, Not Null , Referential integrity).
3. Joins (left,right and equi joins).
4. Sub queries.
5. Built-in functions (Date & time, mathematical functions).
6. Procedures.
7. Functions.
8. Functions with exception handling capability.
9. Cursors.
10. Triggers.

PRACTICAL - 6

L PROGRAMMING LAB

1. Building simple application

2. Application with multiple forms

3. Application with dialogues

4. Application with menus

5. Application using data control

6. Application using format dialogues

7. Drag and Drop events

8. Database Management

9. Creating ActiveX controls

ELECTIVE

(Choose any 1 out of 3)

PAPER - 1

A. 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.OR LINEX System case study.

Text Book

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

PAPER - 1

OFTWARE 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.

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.

UNIT-V

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 - 1

ESIGN OF ALGORITHMS

UNIT 1:

Algorithms- Types of problem-Types of Solution Procedure/Algorithm. Components of Algorithm-Graphs: Terminologies of graph-network-Stack data structure-Queue data structure-Linked link data structure- Binary tree data structure.

UNIT 2:

Distance based Network Algorithms-Dijkstra's Algorithm-Floyd's Algorithm-Minimum spanning tree problem.

UNIT 3:

Search Algorithms: Variable based search algorithms-Branch and Bound Algorithms.

UNIT 4:

Heuristics: Travelling salesman problem-Single machine scheduling problem – Heuristic for total covering problem.

UNIT 5:

Dynamic Programming: Terminologies –Dynamic programming Algorithm-Application Areas of Dynamic Programming-Comparison of Algorithm using optimal solution.

Text Book:

1. Panneer Selvam, R., Design and Analysis of Algorithms –PHI Learning private Limited,New Delhi.

2. S.K.Basu, Design methods and Analysis of Algorithms, - PHI Learning private Limited,New Delhi.

ELECTIVE

PAPER - 2

A. DATA AND COMMUNICATION NETWORKS

UNIT-I

A communications model - Data Communications - Data Communications Networking - computer communication architecture - Analog and Digital - Transmission - Transmission Impairments - Transmission media.

UNIT-II

Data encoding - Digital data Digital signals ,Digital data Analog signals,, Analog data Analog signals Data Communications Interface : Asynchronous and synchronous Transmission.

UNIT-III

Data link control: Flow controls - Error Detection - Error Control.   MULTIPLEXING - Frequency Division multiplexing - Synchronous time - Division multiplexing - Statistical time division multiplexing.

UNIT-IV

Circuit switching: Circuit switching networks switching concepts - Routing in circuit switched networks.

UNIT-V

Packet switching principles - Routing in packet switching - Congestion control.
Frame relay: Frame relay Protocol Architecture – Frame relay Congestion control.

Text Books

1. William Stallings, Data and Computer Communications Fifth Edition , Prentice Hall of India, 1997.
2. Forouzan: Introduction to Data Communication & Networking, McGraw-Hill, 1998.

Reference Books

1. Ulysess D. Black Data Communications and Distributed Networks Third Edition , 1997. Prentice Hall of India.

2. Prakash C.Gupta,Data Communications, Prentice Hall of India,1996.

PAPER – 2

ARTIFICIAL INTELLIGENCE

UNIT I:

Introduction: What is Artificial Intelligence – AI Technique – Level of the model – Problems, Problem spaces and search – Production systems – Problem characteristics – Production system characteristics.

UNIT II:

Heuristic search techniques – Hill climbing – Best first search – Problem reduction – Means end analysis – Knowledge representation issues – Representations and mappings – Approaches – Issues in knowledge representation.

UNIT III:

Using predicate logic – Representing simple facts, Instance – Computable functions and predicates – Representing knowledge using rules – Procedural versus Declarative – Logic programming – Control knowledge.

UNIT- IV:

Symbolic reasoning – Nonmonotonic reasoning – Implementation issues – Breadth first search – Depth first searching – Statistical reasoning – Bayes' theorem – Bayesian network – Fuzzy logic.

UNIT V:

Game playing – Minimax search procedure – Alpha beta cutoffs – additional refinements – Planning – Components of planning – Goal stack planning – Hierarchical planning.

Books for Study:

1. Elaine rich, Kevin knight, "Artificial Intelligence", Second edition, Tata McGraw Hill Edition, 1991.
2. R.B.Mishra , "Artificial Intelligence",PHI,2011.

Reference Books:

1. Stuart Russell, Peter Norvig, "Artificial Intelligence", Second edition, 2003.
2. Dan W. Patterson, "Artificial Intelligence and Expert Systems", 1990.
3. Eugene Charniak, Drew McDermott, "Introduction to Artificial Intelligence", Addison Wesley.

PAPER – 2

C. SOFTWARE TESTING

UNIT-I:

Introduction: Purpose of testing, Dichotomies, model for testing, consequences of bugs, taxonomy of bugs.

UNIT-II:

Flow graphs and Path testing:- Basics concepts of path testing, predicates, path predicates and achievable paths, path sensitizing, path instrumentation, application of path testing.

UNIT-III:

Transaction Flow Testing:-transaction flows, transaction flow testing techniques. Dataflow testing:- Basics of dataflow testing, strategies in dataflow testing, application of dataflow testing.

UNIT-IV:

Domain Testing:-domains and paths, Nice & ugly domains, domain testing, domains and interfaces testing, domain and interface testing, domains and testability. Paths, Path products and Regular expressions:- path products & path expression, reduction procedure, applications, regular expressions & flow anomaly detection.

UNIT-V:

Logic Based Testing:- overview, decision tables, path expressions, kv charts, specifications. State, State Graphs and Transition testing:- state graphs, good & bad state graphs, state testing, Testability tips.

TEXT BOOKS:

1. Software Testing techniques - Baris Beizer, Dreamtech, second edition.
2. Software Testing Tools – Dr.K.V.K.K.Prasad, Dreamtech.

REFERENCE BOOKS:

1. The craft of software testing - Brian Marick, Pearson Education.
2. Software Testing Techniques – SPD(Oreille)
3. Software Testing in the Real World – Edward Kit, Pearson.
4. Effective methods of Software Testing, Perry, John Wiley.
5. Art of Software Testing – Meyers, John Wiley.

LL BASED SUBJECT

PAPER – 3

CRYPTOGRAPHY

UNIT – I

Security attacks - Security Services - A model for internetwork security -Conventional Encryption Model - Steganography - Data encryption standard.

UNIT – II

Principles of public key cryptosystems - RSA algorithm - Key Management -Diffie-Hellman key exchange - Prime and relatively prime numbers.

UNIT – III

Fermat's and Eulers's theorems - Testing of Primality - Euclid's algorithm - Chinese Remainder Theorem.

UNIT – IV

Authentication requirements - authentication functions - message authentication codes - hash functions –Security of Hash functions and MACs.

UNIT - V

Secure Hash Algorithm - Digital Signatures - Authentication Protocols - Digital Signature Standards.

Text Book

William Stallings,"Cryptography and network security", 4/E, PHI, 2006.

Reference

1.Singh, Brijendra, "Network Security and Management", PHI, 2007.

2.Charles.P.Pleeger, "Security in Computing", PHI, 1989.

3.Hans, "Information and Communication Security", Springer Verlag, 1998.

4.Simonds, "Network Security", McGraw Hill, 1998.

5. V.K.Pachghare ,Cryptography and Infn Security,PHI.

SEMESTER VI

PAPER – 11

OPEN SOURCE SOFTWARE

UNIT I : HTML

Introduction to HTML- List- Creating Table- Linking document frames-Graphics to HTML Doc –Style sheet –Style sheet basic-Adding style to document-Style sheet properties-Font-text-list-color and background color-box-Display Properties.

UNIT II : LINUX

Introduction : Linux Essential Commands – File system Concept – Standard Files – The Linux Security Model – Vi Editor – Partitions Creation – Shell Introduction – String Processing – Investigation and Managing Processes – Network Clients – Installing Application.

UNIT III : JAVA SCRIPT

Introduction to Javascript –Advantages of Javascript –JavaScript Syntax-Datatype-Variable– Array – Operators and Expressions- Loops - functions – Dialog box.

UNIT IV : MYSQL

Introduction to MY SQL – The show Databases and Table – The USE command – Create Database and Tables – Describe Table – Select, Insert, Update, and Delete statement – Some Administrative detail – Table Joins – Loading and Dumping a Database.

UNIT V : PHP

PHP Introduction – General Syntactic Characteristics – PHP Scripting – Commenting your code – Primitives, Operations and Expressions – PHP Variables – Operations and Expressions Control Statement – Array – Functions – Basic Form Processing – File and Folder Access – Cooking – Sessions – Database Access with PHO – MySQL - MySQL Functions – Inserting Records – Selecting Records – Deleting Records – Update Records.

1. "Setting Up LAMP: Getting Linux, Apache, MySQL, and PHP and Working Together", Eric Resebrock, Eric Filson, Published by John Wiley and Sons, 2004.
2. Deitel & Deitel ,internet & world wide web How to program, Pearson Education
3. I. Bayross, Web Enable Commercial Application Development Using HTML, DHTML, Javascript, Pen CGI, BPB Publications, 2000
4. J. Jaworski, Mastering Javascript, BPB Publications, 1999
5. T. A. Powell, Complete Reference HTML (Third Edition),TMH, 2002

PAPER – 12

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

3. Kiran Thauras,Prabhut k.andleigu – Multimedia System Design - Printice Hall India.

4. Malay k pakhira , Computer graphics,Multimedia and Animation - Printice Hall India.

PRACTICAL - 7

OURCE SOFTWARE LAB

1. Create a web page with Frames and Tables.

2. Create a web page incorporating CSS (Cascading Style Sheets)

3. Write a shell program to find the factorial of an integer positive number

4. Write a shell program for checking whether a given string is a palindrome or not.

5. Create a simple calculator in Java script.

6. Write a JavaScript program to scroll your name in the scroll bar.

7. Develop a program and check message passing mechanism between pages.

8. Develop a program and check file system functions, date &time functions.

9. Create a student database table in MYSQL and manipulate records

   (insert ,delete, update) records in a web browser.

10. Develop a program using cookies and session.

PRACTICAL - 8

MULTIMEDIA LAB

1.photo Effects:

Decolouring, Changing cloth texture and pattern, Changing background,
Applying soft light effect.

2   Photo Retouching:

2.1 Colour correction, Blending Images, smooth skin effects, adding blur effects
to background.
2.2 Converting black and white photo to colour photo.

3   Text Effect:

Creating Metatie text, Shining text, Illumines text, Transparent glass text,
Marquee,
Digital banner.

4   Image Editing :

4.   Creating simple Images.
a.   Editing – resize, change colour depth, resolution, file format, brightness,
   add and edit layer style, add text.
b. Stitch and edit two images into single using selection, Lasso and elone
   stamp tools (masking).

5   Web Graphics:

a. Creating a gif image using image ready for web
 b. Create a web navigation Image

6   Animation : Text:

a. Text floating into screen from outside the screen.
b. Animated Banner using image ready/any other software.
c. Fade in fade out banners.

7. Animation : Image:
a.   Animated lightening strike.
b.   Mobile wall paper
c.   icon animation
8. Create a digital clock Animation.

ELECTIVE

(Choose any 1 out of 3)

PAPER - 3

A. DATA WAREHOUSING AND DATA MINING

UNIT - I

Introduction: Definition of data mining - data mining vs. query tools – machine learning – taxonomy of data mining tasks – steps in data mining process – overview of data mining techniques.

UNIT - II

Data Warehousing: Definition – Multidimensional Data Model – Data Cube – Dimension Modeling– OLAP Operations – Warehouse Schema – Data Warehouse Architecture – Data Mart – Meta Data – Types of Meta Data – Data Warehouse Backend Process – Development Life Cycle.

UNIT - III

Data Pre-Processing And Characterization :Data Cleaning – Data Integration and Transformation – Data Reduction – Discretization and Concept Hierarchy Generation – Primitives – Data Mining-Query Language – Generalization – Summarization – Analytical Characterization and Comparison - Association Rule – Mining Multi Dimensional data from Transactional Database and Relational Database.

UNIT - IV

Classification and prediction: Classification – Decision Tree Induction – Bayesian Classification – Prediction –Back Propagation – Accuracy and error measures.

UNIT - V

Cluster Analysis: Types of data – Clustering Methods – Partitioning methods – Hierarchical methods - Model based clustering methods - outlier Analysis..

Text Books

1. Paulraj Ponnaiah, Data Warehousing Fundamentals, Wiley Publishers, 2001.

2. Jiawei Han, Micheline Kamber, Data Mining Concepts and Techniques, Morgan Kaufman Publishers, 2009.

3. N.P.Gopalan,B.Sivaselvan ,Data Mining Techniques and Trends ,PHI,2009.

etsky Shapiro, Padhrai Smyth, Ramasamy Uthurusamy, Advances in Knowledge Discover and Data Mining, The M.I.T. Press, 2007.

2. Ralph Kimball, Margy Ross, The Data Warehouse Toolkit, John Wiley and Sons Inc., 2002.

3. Alex Berson, Stephen Smith, Kurt Thearling, Building Data Mining Applications for CRM, Tata McGraw Hill, 2000.

4. Margaret Dunham, Data Mining: Introductory and Advanced Topics, Prentice Hall, 2002.

5. Daniel T. Larose John Wiley & Sons, Hoboken, Discovering Knowledge in Data: An Introduction to Data Mining, New Jersey, 2004.

PAPER – 3

TAL IMAGE PROCESSING

UNIT I :

CONTINUOUS AND DISCRETE IMAGES AND SYSTEMS : Light, Luminance, Brightness and Contrast, Eye, The Monochrome Vision Model, Image Processing Problems and Applications, Vision Camera, Digital Processing System, 2-D Sampling Theory, Aliasing, Image Quantization, Lloyd Max Quantizer, Dither, Color Images, Linear Systems And Shift Invariance, Fourier Transform, Z Transform, Matrix, Theory Results, Block Matrices and Kronecker Products.

UNIT II:

IMAGE TRANSFORMS : 2-D orthogonal and Unitary transforms, 1-D and 2-D DFT, Cosine, Sine, Walsh, Hadamard, Haar, Slant, Karhunen – loeve, Singular value Decomposition transforms.

UNIT III :

IMAGE ENHANCEMENT : Point operations – contrast stretching, clipping and these holding density slicing, Histogram equalization, modification and specification, spatial operations – spatial averaging, low pass, high pass, band pass filtering, direction smoothing, medium filtering, generalized cestrum and homomorphism filtering, edge enhancement using 2-D IIR and FIR filters, color image enhancement.

UNIT IV :

IMAGE RESTORATION : Image observation models, sources of degradation, inverse and Wiener filtering, geometric mean filter, non linear filters, smoothing splines and interpolation, constrained least squares restoration.

UNIT V :

IMAGE DATA COMPRESSION AND IMAGE RECONSTRUCTION FROM PROJECTIONS : Image data rates, pixel coding, predictive techniques transform coding and vector DPCM, Block truncation coding, wavelet transform coding of images, color image coding. Random transform, back projection operator, inverse random transform, back projection algorithm, fan beam and algebraic restoration techniques.

Book for Study :

1. Anil K.Jain, "Fundamentals of Digital Image Processing", PHI, 1995.
2. Sid Ahmed M.A., "Image Processing", McGraw Hill Inc, 1995.

., "Digital Image Processing", Addison Wesley. 2nd Ed,

4.   Anil Jain,Fundamentals of Digital Image Processing - Printice Hall India.

5.   Madineri A.Joshi – DIP an algorithmic approach - Printice Hall India.

6.   Malay k. Pakhira – DIP and pattern Recognition - Printice Hall India

7.   B.Chanda & D.Dutta Majumder, Digital Image Processing,PHI.

PAPER - 3

RE PROJECT MANAGEMENT

UNIT- I

Introduction to SPM – Software projects versus other types of projects – Problems with software projects – Management control – Stakeholders – Requirement specification – Information and control in organizations – Step wise project planning.

UNIT- II

Project Evaluation and Selection – Strategic assessment – Technical assessment – Cost-Benefit analysis- Cash flow forecasting –Cost-Benefit evaluation techniques – Risk evaluation – Choosing techniques – Structures methods- Rapid application development – Waterfall model - V process model – Spiral model

UNIT- III

Activity Planning – Project schedules – Projects and activities – Sequencing and scheduling activities – Network models – Lagged activities – Time dimension – Passes and activities – Managing risk – Risk analysis – Evaluating risks.

UNIT- IV

Resource Allocation – Nature of resources – Resource requirements – Scheduling resources – Critical paths - Cost schedules - Scheduling sequences – Creating the framework – Collecting data and monitoring – Prioritizing monitoring – Change control.

UNIT- V

Managing Contracts – Types of contract – Stages and terms of a contract - Contract management and acceptance.

Text Book:

Software Project Management – Bob Hughes and Mike Cotterell, Tata McGraw Hill Publishing Company Limited.

LL BASED SUBJECT

PAPER - 4

INTERNET

UNIT- I

Connecting to the Internet – Domain Name System - Exchanging E-mail – Sending and Receiving Files - Fighting Spam, Sorting Mail and avoiding e-mail viruses – types of viruses – Harmful effects of virus - Chatting and Conferencing on the Internet – Online Chatting.

UNIT – II

Messaging – Usenet Newsgroup – Internet Relay chat (IRC) – Instant Messaging - Voice and Video Conferencing. Web Browsers- Internet Explorer- Features of Internet explorer6 Searching the Internet- online help and tutorials- Browser settings.

UNIT - III

Overview – Web Security, Privacy, and site-blocking – Audio and Video on the web – Creating and Maintaining the Web – Web site creation concepts – Web Page Editors.

Unit - IV

Optimizing Web Graphics – Web Audio Files – Forms, Interactivity, and Database-Driven Web sites – File Transfer and downloading – FTP – Peer to Peer – Downloading and installing software.

UNIT - V

What is Intra net – Advantages and disadvantages of intranet –components of intranet – Connecting a small LAN to the internet.

Textbook:

1. Internet and World Wide Web Third edition H.M.Deital, P.J. Deital and A.B.Goldberg-PHI
2. Margaret Levine Young, "Internet and WWW", 2nd Edition, Tata McGraw Hill, 2002.
3. The Internet- Complete Reference Harley hahn, Tata McGraw hill.

EMO – INTERNET

Creating an e mail ID (create two e mail ID with two different service provider)~Sending e mail to your friend Receiving e mail from your friend- delete a e mail ~ Attach a word file to Your   e mail and send to your friend ~ Attach a spread sheet file to Your e mail and send to your friend ~ Attach a graph file to Your e mail and send to your friend ~   Attach your photograph to Your   e mail and send to your friend ~ Redirect the mail you receive in your e mail ID to some other e mail ID.

 Search the internet with two different search engines other than Google ~ Search for the blog ~ Search for a news item ~ Search the internet to find the road route from Vellore to Chennai and find out what is the distance in Km. ~   Access the internet with two different browser other than internet explorer ~ Use yahoo messenger ~ Start a chatting session by inviting your friend online ~ Accept others invitation for chatting ~Access the facebook.

Access the internet and read two newspaper ~ Access the internet and read two news websites ~ Access the website of any one bank in India and find out what is the rate of interest for three years fixed deposit ~ Access the website of any one online bookstore and find out the price, author name, publisher name for a particular book ~ Down load music from internet and play ~ Down load video from internet and play ~ Access the website of Indian railways and find out the train timings between any two railway stations ~   Access the website of any one Indian car company website and one multinational car company website and write down the difference between them with respect to design, color, menus, user friendliness and content.

ACTICAL EXAMINATIONS:

Answer any **TWO** questions out of three (2/3) for each question 25 marks. 2x25=50 marks.

10 marks for record note book. Total 60 marks.

Practical CIA	–	40 marks
University Practical	–	60 marks
Total	–	100 marks