SAKTHI COLLEGE OF ARTS AND SCIENCE FOR WOMEN, ODDANCHATRAM

(Recognized Under Section 2(f) and 12(B) of UGC Act 1956)

(Affiliated to Mother Teresa Women's University, Kodaikanal)

PG AND RESEARCH DEPARTMENT OF COMPUETR SCIENCE

CURRICULUM FRAMEWORK AND SYLLABUS FOR

OUTCOME BASED EDUCATION IN

SYLLABUS FOR

B.Sc., COMPUTER SCIENCE

FRAMED BY

MOTHER TERESA WOMEN'S UNIVERSITY, KODAIKANAL

UNDER

CHOICE BASED CREDIT SYSTEM

2015 - 2018

DEPARTMENT OF COMPUTER SCIENCE

ALLOCATION OF PAPERS AND CREDITS FOR UG PROGRAMME

EFFECT FROM - 2014-15 ACADEMIC YEAR ONWARDS

B.Sc. Computer Science

I SEMESTER

S.NO.	PART		SUBJECT NAME	CREDITS	HOURS
01.	Part – I		Tamil	3	6
02.	Part – II		English	3	6
03.	Part – III	Core 1	Programming in C	4	5
04.		Core 2	Digital Principles and Computer Organization	4	5
05.	Allied		Discrete Mathematics	4	5
06.	VE		Value Education	3	3
Total				**21**	**30**

II SEMESTER

S.NO.	PART		SUBJECT NAME	CREDITS	HOURS
01.	Part – I		Tamil	3	6
02.	Part – II		English	3	6
03.	Part – III	Core 1	Data Structures with C++	4	5
04.		Core 2	Programming in C and C++ Lab	4	6
05.	Allied		Office Automation Lab	4	5
06.	ES		Environmental Studies	2	2
Total				**20**	**30**

III SEMESTER

S.NO.	PART		SUBJECT NAME	CREDITS	HOURS
01.	Part – I		Tamil	3	6
02.	Part – II		English	3	6
03.	Part – III	Core 1	Micro Computer Architecture	4	5
04.	Allied		Numerical Methods	4	4
05.	Elective		Fundamentals of Computer Algorithms	3	5
06.	NME		Fundamentals of Computer	2	2
07.	SBS		DTP Lab	2	2
Total				**21**	**30**

IV SEMESTER

S.NO.	PART		SUBJECT NAME	CREDITS	HOURS
01.	Part – I		Tamil	3	6
02.	Part – II		English	3	6
03.	Part – III	Core 1	Relational Database Management Systems	4	4
04.		Core 2	Relational Database Management Systems Lab	4	4
05.	Allied		Micro Computer Architecture Lab	4	3
06.	Elective		Operations Research	3	3
07.	NME		Principles of Information Technology	2	2
08.	SBS		Web Design Lab	2	2
Total				**25**	**30**

V SEMESTER

S.NO.	PART		SUBJECT NAME	CREDITS	HOURS
01.	Part – III	Core 1	Operating System	4	4
02.		Core 2	Data Mining	4	4
03.		Core 3	Software Engineering	4	5
04.		Core 4	Computer Networks	4	5
05.		Core 5	Computer Graphics	4	5
06.	Elective		Visual Basic Lab	3	5
07.	SBS		Computer Graphics Lab	2	2
Total				**25**	**30**

VI SEMESTER

S.NO.	PART		SUBJECT NAME	CREDITS	HOURS
01.	Part - III	Core 1	Java and Internet Programming	4	4
02.		Core 2	Web Technology	4	4
03.		Core 3	Multimedia Technology	4	4
04.		Core 4	Java And Internet Programming Lab	4	5
05.		Core 5	Web Technology Lab	4	5
06.	Elective		Information Security	3	3
07.	SBS		Multimedia Lab	2	2
08.	EA		Extension Activities	3	3
Total				**28**	**30**

SCHEME OF EXAMINATION

Internal - 40

- **Test - 25**
- **Seminar/Activity - 10**
- **Assignment - 5**

Total - 40

External - 60

QUESTION PATTERN

Theory – Internal

Part -A	-	11 X 1 MARKS = 11
Part - B	-	2 X 3 MARKS = 6
Part - C	-	1 X 8 MARKS = 8
Total	**-**	**25**

Theory (External)

Part -A	-	10 X 1MARKS = 10
Part - B	-	6 X 3 MARKS = 18
Part - C	-	4 X 8 MARKS = 32
Total	**-**	**60**

Practical (Internal – 40)

Process	-	10
Result Verification	-	10
Viva	-	5
Total	-	25
Record	-	15
Total	-	40

Practical (External– 60)

Process	-	25
Result Verification	-	25
Viva	-	10
Total	-	60

SEMESTER I

PROGRAMMING IN C

UNIT I

History of C, Importance of C, Structure of C program, Programming style, Executing a C Program, keywords, identifiers, constants, variables, data types, type conversion, Types of operators and expressions, Managing Input and output operations in C.

UNIT II

Decision making and Branching: Decision Statement –IF-ELSE statement, and nested IF statement break, continue, goto, switch() case. Loop Control Statements –For loop, While loop, Do-while loop and nested loops.

Arrays –Definition, Initialization, characteristics, One, Two, Three and Multidimensional Arrays, Working with Strings & Standard Functions.

UNIT III

Functions –Declaration, Prototype, Types of functions, call by value and reference, Function with operators, function with decision statements, function with Loop statements, Function with Arrays, Types of Storage Classes.

UNIT IV

Structure and Union –Declaration, Initialization, structure within structure, Array of Structure, Enumerated data types, Union of structure, Files – Streams and file types, file operations, File I/O, Read, Write and Other file function

UNIT V

Pointers –Introduction, features, Declaration, Arithmetic operations, pointers and Arrays, Array of pointers, pointers to pointers, pointers and strings, Pointers to structures.

Text Books

1. Programming in ANSI C by E. Balaguruswamy, Tata McGraw Hill Publishing Company, 2002.

Reference Books

1. Programming Techniques through C – A beginners Companion by M.G. Vankatesh Murthy, Pearson education, New Delhi, 2002.
2. Programming in C and C++ by S. Chand & Company Ltd., New Delhi, 2002.

DIGITAL PRINCIPLES & COMPUTER ORGANIZATION

UNIT I

Number Representation: Number system – Binary – Hexa Decimal – Octal codes – BCD – Excess 3 – Gray codes – ASCII – EBCDIC – Boolean Algebra: Boolean laws – Logic gates – K. Map: sum of products – Product of sum method.

UNIT II

Encoder – Decoder – Multiplexer – Negative Number: 1's & 2's Complement – Half & Full adder.

UNIT III

Flip – Flop: RS, D, JK - Triggering – Registers: Four shift registers - Counters.

UNIT IV

Data & Instructor format fixed print & floating point – Number representation – representation of singed numbers – Alpha numeric representation – Arithmetic and logical Units -, +, *, / with singed number – Floating point arithmetic operation logical operation.

UNIT V

Central Processor unit: Processor bus organization – Instruction format – Addressing modes – data transfer & Manipulation – Memory and I/O units – Main Memory – RAM and ROM address space – Asssociative – Virtual cache Memory – I/O bus verses memory bus.

Text books

1. Digital Principles and Design By Malvino Leach, Fourth Edition TMH Publications.
2. Digital Principles By Thomas C. Bartee, TMH Publications.
3. Computer systems Architecture by Moris Mano, M. PILL Publications.

DISCRETE MATHEMATICS

UNIT I

Review of theory of sets – Relations – Equivalence Relations – partial Order – Function – Binary Operations.

UNIT II

Logic – Introduction – connectives – Truth Table – Tautology – Implications – Equivalences.

UNIT III

Groups – Definitions & Examples – Elementary – Properties – Sub Groups – Cycle groups – Cosets and Lagrange's Theorem – Normal Subgroups.

UNIT IV

Matrices – Special type of Matrices – operations – Inverse of a Matrices – Elementary Transformation – Rank of Matrix – Simultaneous Linear Equation – Eigen values and Eigen vectors – Cayley Hamiltion theorem.

UNIT V

Partial Ordering – Posets – Hasse Diagram - Lattices – Properties – Sub Lattices – Special lattices – Boolean Alegbra.

Text Books

1. Modern algebra & S. Arumugam & Thangapandi Issac, New Gamma Publishing House, Palamkottai.
2. Discrete mathematics by M.K. Venkataramanan and N. Chandrasekaran, nation publishing CO., Chennai.

VALUE EDUCATION

UNIT I

Values – Definition – value crisis – need for practicing positive values for good life – value erosion – its impact on individual, societal – cultural level – way out.

UNIT II

Family, material, human values – good health – individual and intellectual freedom – human progress – production and distribution – prosperity and peace – Aesthetic values – sense of beauty – moral ethical value – conscience – integrity – fairness.

UNIT III

Society values – cooperative living – healthy behaviors – justice – social responsibility – free from bribery and corruption – good citizen – good society – pursuit of excellence – psychological values – self esteem and acceptance – emotional intelligence – spiritual values – devotion and self fulfillment.

UNIT IV

Bio-Ethics – definition –goals and objectives – love of life – animal use and ethics – medical ethics – negligence and wrong judgments – issues genomes on organ transplantation – donors – drugs – morality – social ethics – child labor and bonded labor.

UNIT V

Women – and development – sex versus gender – women's rights – factors affecting development – violence against women – right to privacy – abortion and reproductive rights – social stigma – women empowerment – social, economic and political –government program and policies.

SEMESTER-II

DATA STRUCTURES WITH C++

UNIT I

Principles of Object–Oriented Programming – Beginning with C++ Tokens. Expressions and Control Structures - Functions in C++.

UNIT II

Classes and Objects – Constructor and Destructors – Operator Overloading and Type Conversions.

UNIT III

Inheritance: Extending Classes – Pointers, Virtual Function and Polymorphism – Managing consoles I/O operations.

UNIT IV

STACKS AND QUEUES: Fundamentals – Amazing Problem – Evaluation of expression - Singly Linked List, Linked Stacks and Queues – Polynomial Addition – Doubly Linked list and Dynamic Storage Management

UNIT V

TREES: Basic Terminology – Binary Trees – Binary Tree Representations – Binary Trees Traversal – More on Binary Trees – Threaded Binary trees –Counting Binary Trees.

Text Book

1. Fundamentals of Data Structure by Ellis Horrowitz Sartaj Sahnia Galgotia Publications, 1998.
2. Reference: Sam Series (Dynamic Storage Management)
3. Object oriented Programming with C++ by E. Balagurusamy Tatta McGraw Hill Publishing Company Limited 1998 Chapter: 1 to 11.
4. Data Structure, Algorithms and Applications in C++ Sartaj Sahni McGraw Hill 1998.
5. C++, the Complete Reference Herbert Schlitz, 1997.

References

1. Data Structure, Algorithms and Applications in C++, Sartaj Sahni, TMH 1988.

PROGRAMMING IN C AND C++ LAB

1. Simple Programs
2. Arrays
3. Strings
4. Functions
5. Recursion
6. Structures
7. Pointers
8. Arrays with Structures
9. Arrays with Pointers
10. Files
11. Call by value & call by reference method
12. Inline function in C++
13. Function overloading
14. Default Arguments
15. Operator overloading
16. Programms using Inheritance
17. Program using polymorphism and virtual functions
18. File concepts
19. Stack using Array
20. Queue Using Array
21. Stack Using Pointers
22. Queue Using Pointers

OFFICE AUTOMATION LAB

MS-WORD

1. Preparing Documents Using Formatting options.
2. Table preparation
3. Find and Replace
4. Mail merge
5. Header and Footer
6. Drop cap

MS-EXCEL

1. Pay role calculation
2. Mark sheet preparation using mathematic function
3. Chart preparation

MS –ACCESS

1. Table creation
2. Query processing
3. Form
4. Report generation

MS-POWER POINT

1. Slide show animation

ENVIRONMENTAL STUDIES

UNIT I

The Multidisciplinary nature of Environment studies – Definition, scope and importance need for public awareness.

UNIT II :

Natural resources - Renewable and Non renewable resources: Natural resources and associate problems. - (a)Forest Resources :Use and over exploitation, deforestation, case studies timber extraction, mining, dams and their effects on forests and tribal people. - (b)Water Resources: Use and over utilization of forest of surface and group water, floods drought, conflicts over water, dams- Benefits and problems. - (c) Mineral resources: Use and over exploitation, Environmental effects of extracting and using mineral resources, case studies. - (d)food resources: World food problems changes caused by agriculture and over grazing effects of modern agriculture, fertilizer pesticide problems, water logging, salinity, case studies. - (e) Energy resources: Growing Energy needs renewable and non renewable energy sources, use of alternate energy sources, case studies. - (f) Land resources : Land as a resource, land degradation, man induced landslides, soil erosion and desertification.

- Role of an individual in conservation of natural resources.
- Equitable use of Resources for sustainable life styles

UNIT III :

Ecosystems - Concept of an Ecosystem. - Structure and function of an ecosystem. - Energy flow in the Ecosystem. - Ecological Succession. - Food chains, food webs and ecological pyramids. - introduction, Types, Characteristics features, structure and function of the following Ecosystem: (a) Forest Ecosystem. - (b) Grassland Ecosystem. - (c) Desert Ecosystem. - (d) Aquatic Ecosystem (Ponds, streams, lakes, rivers oceans, estuaries).

UNIT IV

Bio-diversity and the conservation - Introduction – Definition: Genetic, Species and Ecosystem Diversity. - Biographical classification of India. - Value of bio diversity: consumptive use, productive use, social, ethical, Aesthetic and option values. - Biodiversity at global, National and local levels. - India as a mega diversity nation. - Hot spots of biodiversity - Threats to Biodiversity: Habitat loss, Poaching of Wildlife, Man wildlife conflicts. - endangered and Endemic Species of India. - Conservation of biodiversity: In situ and Ex situ conservation of biodiversity.

UNIT V

Environmental pollution - Definition - Causes, Effects and Control measures of: Air pollution. - Water pollution.-Soil pollution. - Marine pollution - Noise pollution -Thermal pollution - Nuclear hazards. - Solid waste management: Causes, effects and control measures of urban and industrial wastes. - Role of an individual in prevention of pollution. - Pollution case studies. - Disaster Management: Floods' Earthquake, cyclone and Landslides.

UNIT VI

Social issues and the environment - From unsustainable to sustainable development - Urban problems related to energy. - Water conservation, Rain Water harvesting, Water shed management. - Resettlement and Rehabilitation of people: its problems and concerns, case studies. - Environmental ethics: Issues and possible solutions. - Climate change global warming, acid rain, ozone layer depletion, Nuclear accidents and holocaust case studies. - Wasteland reclamation. - Consumerism and waste products. - Environment protection act. - Air (prevention and control pollution) acts. - Water (prevention and control pollution) acts. - Wildlife (protection) act. - Forest (conservation) act. - Issues involved in Enforcement of Environmental legislation. - Public Awareness.

UNIT VII

Human population and environment - Population growth, variation among nations. - Population Explosion – Family Welfare programme. - Environment and human health. - Human rights. - Value education. - HIV/AIDS. - Woman and child Welfare. - Role of information Technology in Environment and Human Health.

SEMESTER – III

MICRO COMPUTER ARCHITECTURE

UNIT I

Introduction to 8086 – 8086 Internal Architecture Pin Diagram - 8086 Addressing Modes – Instruction formats – Comparison of 8086 with other 16 bit Processors.

UNIT II

8086 Assembly Language Programming:

Program Development Steps – Constructing machine codes – writing Programs for use in Assembler – simple sequence programs – jumps , Flags, and conditional jumps – If Then, If – Then Else and Multiple IF – Then – Else program – While – Do Programs – Repeat – Until programs, Instruction Timing and Delay Loops.

UNIT III

Strings, Procedures, and Macros: 8086 String instructions – Writing and using Procedures – Writing and using Assembler Macros, 8086 Instruction Descriptions – Assembler Directions.

UNIT IV

Troubleshooting a simple 8086 – Based Microcomputer – Timer Counter – 8086 Interrupts and Interrupt responses.

UNIT V

Digital Interfacing: Programmable parallel ports code and Handshake Input/output – Interfacing a Microprocessor to Keyboards- Analog Interfacing and Industrial Control D/A converter operation, Interfacing a Applications - A/D converter Specifications, Types and Interfacing – Direct Memory Access (DMA).

Reference Books:

1. “Microprocessors and Interfacing” – Douglas V. Hall – Second Edition.
2. “Microprocessor and Microcomputer – based System Design” – Mohamed Rafiquzzaman.
3. “Micro computer and Trouble Shooting” – Asser.

NUMERICAL METHODS

UNIT I

Algebraic and transcendental equations: Errors in numerical computations – iteration methods – bisection methods – regular false methods – Newton Rap son method.

UNIT II

Simultaneous equations – back substitutions – gauss elimination method – gauss serial iteration method – comparison of direct and iterative method.

UNIT III

Interpolation – Newton's Formulae – gauss interpolation formulae Lagrange's Interpolation formula – inverse interpolation.

UNIT IV

Numerical Differentiation: Newton's formulae – Numerical integration – Simpson's Rule – Gaussian Quadrature

UNIT V

Numerical solution of differential equations: Euler's method – Taylor series method – Range Kati methods – Predictor Corrector methods.

Text books:

1. Numerical methods by S.Arumugam and S.Thangapandi Issac, A.Somasundaram, Scitech publications, Chennai-2002

FUNDAMENTALS OF COMPUTER ALGORITHMS

UNIT I

Introduction: Divide and conquer: General Method-binary search-finding the maximum and minimum – Merge sort – Quick sort – Selection sort.

UNIT II

The greedy method: General method -Optimal storage on tapes - Knapsack problem – Job sequencing with deadlines – Minimum spanning trees, Single Source Shortest path.

UNIT III

Dynamic Programming: General method – Multistage graphs – All pairs shortest paths – Optimum Binary search Trees –0/1 Knapsack – the travelling salesman problem – Flow shop scheduling.

UNIT IV

Basic search and Traversal Techniques: The techniques – Code optimization – AND/OR graphs – Biconnected components and Depth – First search – Breadth first search.

UNIT V

Backtracking: General Method- 8 Queens Problem – Hamiltonian cycles – Knapsack problem – Euler circuit.

Branch and bound: Travelling Salesman – Efficiency consideration.

Text Books:

1. Fundamentals of Computer Algorithms by Ellis Horowitz and Sartaj sahni, Galgotia publications, New Delhi.

FUNDAMENTALS OF COMPUTER

UNIT I

Introduction to computers – Generation of Computers – Types of Computers Comparison of Micro, Mini and mainframe computers – Advantages of Computer – characteristics of Computer – limitations of computer.

UNIT II

Block diagram of a Computer – input devices – output devices – storage devices – RAM – ROM – comparison b/w RAM and ROM – Secondary storage devices.

UNIT III

Types of Software – Operating systems – Need for an operating systems – functions of OS – popular operating systems – five generation of programming languages – packages.

UNIT IV

Binary number system – Binary Arithmetic operations (Addition, Subtraction, Multiplication, Division) – ASCII codes _ Algorithms – Flow chart – Pseudo codes – steps in programming.

UNIT V

Definition – Features of networks – Network Topologies –LAN – WAN – MAN – Comparison between LAN and WAN – Introduction to Internet – History of internet uses of Internet – working with windows.

Text Book:

1. Fundamentals of IT – Alexis, Mathews Leon.

SKILL BASED ELECTIVE COURSE- DESK TOP PUBLISHING LAB (DTP)

Page Maker

1. Visiting Card in English
2. Advertisement
3. Certificate
4. Wedding Invitation card in English
5. Greeting card
6. Prospectus
7. Flow Chart
8. Calendar

Coral Draw

9. India Map
10. Cartoon
11. Rangoli
12. Logos in Tamil
13. Fashion Designing
14. Jewel Designing
15. Greeting card

PhotoShop

16. Album

SEMESTER – IV

RELATIONAL DATA BASE MANAGEMENT SYSTEM

UNIT I

Introduction: Purpose of data base systems – View of data – Data models – Database languages – Transaction management – Storage management – Database Administrator – Database users – Overall system structure.

UNIT II

Entity – Relationship Model

Basic concepts – Design issues – Mapping cardinalities – Keys – E-R Diagrams – Weak entity sets – Extended E-R features – Design of an E-R Database scheme – Reduction of an E-R scheme to table.

UNIT III

Relational Model: Structure of relational databases – Relational algebra – The tuple relational calculus – The domain relational calculus – Extended relational – Algebra operations – Modification of the database – Views.

UNIT IV

Other Relational Languages & Integrity Constraints:

Query by Example – Quel – Datalog – Domain constraints – Referential Integrity – Assertions – Triggers – Functional dependencies.

UNIT V

PL/SQL – Relationships between SQL & PL/SQL –Advantages of PL/SQL – arithmetic & expressions in PL/SQL – Loops and conditional statements in PL/SQL – Exceptions Handling – Cursor management – Triggers – Functions & Procedures.

Text Book

Database system concepts (third edition) - Abraham Silberschatz, Henry F.Korth l.Sudershan, McGrawhill International Editions, 1997.

Reference books

1. S.AT’RE-DS Techniques for Design, Performance& Management-John Wiley&sons.

2. James W Martin N-Principles Of Database Management-Prentice Hall, 1979.

3. C.I.DATE an Introduction to DBS-addition Wesley,1981.

RDBMS LAB

PL/SQL

1. Program using conditional control, interactive controls & sequential controls.
2. Program using excepting handling
3. Programs using explicit cursors & implicit cursors
4. Program using PL/SQL tables & records
5. Programs using database triggers
6. Program to design procedures using In, Out, Parameter
7. Program to design procedures using functions
8. Program to design procedures using packages
9. Program using ADO, DAO & RDO connectivity.

MICRO COMPUTER ARCHITECTURE LAB

1. Addition of two 16 bit number
2. Square of 16 bit number by addition method
3. Division of 16/16 bit number by subtraction method
4. Sum and average of 5-8 bit number
5. Square root of a 16 bit numbers
6. Largest number among 7-8 bit numbers
7. Searching element in an array
8. Sorting 8 bit numbers in Ascending order
9. Generating 10-8 bit Fibonacci series
10. Finding factorial value of 8 bit number
11. Checking prime or not for 8 bit number
12. To find the length of the string
13. Palindrome checking
14. Addition of two 32 bit number
15. To demonstrate AND, OR, NOT, XOR operations on two 8 bit numbers.

OPERATIONS RESEARCH

UNIT I

Development of OR – Definition OR – General methods for solving OR models – main characteristics and Phases of OR study – tools, techniques and methods – scientific methods in OR – Scope of OR.

UNIT II

Linear Programming Problem – Mathematical formation of L.P.P. – Stack and surplus variables – graphical solution of L.P.P.

UNIT III

Simplex method – computational procedure – Artificial Variables technique - two phase method – Duality in linear programming.

UNIT IV

Mathematical formulation of transportation problem – optimal solution of T.P. – Methods for obtaining an initial feasible solution – Optimal solution – Degeneracy in T. Unbalance T.P.

UNIT V

Mathematical Formulation of Assignment Problem- Assignment Algorithm – Optimal Solution of Assignment Problem- -Unbalance Assignment Solution – Balanced Assignment Solution.

Text Books:

1. Operations Research – S.D. Sharma (Kedarnath Ramanath & COBOL) chapter 1 to 6 (all section).

Reference Books:

1. Handy Taha
2. Manmohan Gupta

PRINCIPLES OF INFORMATION TECHNOLOGY

UNIT I

Introduction – history of Information – Quality of Information – Information processing – Database – Character tics of Data in a Database – DBMS – Types of DBMS – Data Normalization.

UNIT II

Internet and world wide web : Introduction – getting information on the internet – providing information on the internet – compiling information from the internet – internet access – basis – protocols – internet addressing – WWW – HTML – Web browsers – searching the web.

UNIT III

Multimedia Tools: Introduction – graphics effects and techniques – sound & music – video – multimedia authoring tools – virtual reality.

UNIT IV

Data warehouse & Data Mining: Introduction – advantages of data ware house – components – structure – uses – data mining introduction – advantages of data mining – technologies used in data mining.

UNIT V

Application of information technology: Computers in business and industry – computers in home – educations and training – entertainment science and engineering and medicine.

Text books:

1. Fundamentals of information technology – Alexis Leon, Mathews Leon

Reference Book:

1. Advanced information technology – S. Jaiswal

WEB DESIGN LAB

1. Web page creation using head, title, body, h1 – h6.
2. Web page creation using formatting tags (bold, italic, underline etc)
3. Ordered list
4. Unordered list
5. Definition list
6. Marquee creation
7. Web page with images
8. Web page creation with various font styles and body colors.
9. Hyper link
10. Tables
11. Frames
12. Forms

VB SCRIPT

13. Greatest among three numbers using branching statements
14. Sorting
15. Fibonacci Series
16. Palindrome Checking
17. Looping through Arrays
18. Background color changing
19. Temperature color changing
20. Functions
21. Date and time function
22. String Function
23. Numeric Function
24. 9. Quiz using Forms
25. 10. Online Shopping

SEMESTER – V

OPERATING SYSTEM

UNIT I

Introduction: Definition operating system objectives and functions – operating system as a resource managers, operating system as a user/computer interface – Evolution of operating system – Serial processing, batch processing, Multiprogramming, time sharing system.

UNIT II

Process Management: Process and threads – Principles of concurrency – mutual exclusion – Semaphores – Message passing – dead lock – principles – prevention – avoidance - Detection.

UNIT III

Memory Management: Memory management requirements – Relocation, protection, sharing, Logical organization, Physical organization – Virtual memory – Locating and virtual memory, paging, segmentation, combined paging and segmentation – Protection and sharing – Operating system software – fetch policy, placement & replacement policy.

UNIT IV

I/O management & disk scheduling: I/O devices – organization of the I/O function – operating system design issues – I/O buffering – Disk Scheduling.

UNIT V

File Management: Overview – file organization and access – file directories – file sharing – Record blocking – Secondary storage management.

Text Books:

1. Operating systems by William Stallings.
2. Operating Systems by Silberchatz

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 Ltemset 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 Michelin 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 : Prentice Hall of India (2007)

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

Author : Ian H. Witten & Elbe 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

SOFTWARE ENGINEERING

UNIT I

Introduction to Software Engineering some definitions – some size factors – quality to productivity factors – managerial Issue.

Planning a software project: defining the problems developing a solution strategy – planning on organization structure – other planning activities.

UNIT II

Software cost estimation: Software cost factors – Software cost estimation techniques – staffing – level estimation – estimative software maintenance costs.

UNIT III

Software requirements, definition: the software requirements specifications – formal specification techniques – language and processors for requirements specification.

UNIT IV

Software Design: fundamentals Descartes concepts – Modules and Modularizing criteria - Design techniques – detailed design considerations – real time and distributed system design – test plan – mile – stones walk through and inspection – design guide line.

UNIT V

Verification and validation techniques: Quality Assurance – static analysis – symbolic execution – unit testing and debugging system - testing formal verification.

Software maintenance: enhancing maintainability during developments managerial aspects of software maintenance – configuration management – sources code metrics – other maintenance tools and techniques.

Text book:

Software Engineering Concepts, 1985 Mc Grew Hill Book company by Richard E.Fairy, chapters 1-5, 8,9

References books:

1. Software Engineering: A practical Approach by Foger S.Pressman Mc Graw Hill International Books Company 1987 Edition.
2. Software Engineering-Mathur
3. Software Engineering-James

COMPUTER NETWORKS

UNIT I

Introduction: User - Hardware – Software – Reference Models – Example Network – Example Data Communication service – Network Standardization.

UNIT II

Physical Layer: Transmission Media – Wireless Transmission – The Telephone system – Cellular radio – Communication satellites.\

UNIT III

Data Link Layer & Medium Access Layer – D.L.L.Design Issues – Elementary Data link protocols – Multiple Access Protocols – Ethernet, Token bus, Token ring standards.

UNIT IV

Networks Layer & Transport Layer: N.W.L. Design Issues – Routing - Algorithms – T.P.L. Design Issues – Elements of T.P.L.Protocol.

UNIT V

Application Layer: Network Security – E-Mail – Use Net news – W.W.W – Multimedia.

Text Book

1. Computer Networks by Andrew S.Tenenbaum, PHI, Third edition, 1996.
2. Computer Networks - Fourouzan

COMPUTER GRAPHICS

UNIT I

Application of Computer graphs – Video display devices – Raster scan systems – Random scan system – Graphics monitor – Input devices – Hard copy devices.

Points & Lines – DDA & Bresenhames line drawing, algorithms – Circle generating algorithms – Ellipse – generating algorithms – Other curves – Character generator.

UNIT II

Line Attributes – Curve Attributes – Color and Grayscale Levels – Area-Fill Attributes – Character Attributes – Bundled Attributes – Inquiry Functions – Anialiasing.

UNIT III

Translation – Rotation – Scaling – Matrix representatives & homogeneous coordinates – Composite – Transformation – Reflection & Shear.

UNIT IV

The viewing pipeline – Viewing coordinate reference frame – Window to view port coordinate transformation – Viewing functions – Clippings functions – point clipping – Line clipping – polygon clipping – Curve clipping – Text clipping – Exterior clipping.

UNIT V

Input of Graphical Data – Input Functions – Interactive Picture-Construction Techniques – Virtual-Reality Environments - Three-Dimensional Display methods – Three-Dimensional Graphics Packages.

TEXT BOOKS

1. Computer Graphics By Donald Hearn and M.Pauline Basker PHI, Second edition, 1994.

VISUAL BASIC LAB

1. Simple Arithmetic Operators(+,-,*,/) Using text command boxes.
2. Manipulation of string and data functions.
3. Designing in calculator.
4. Magic square.
5. Number Puzzle, Picture Puzzle.
6. Using file, directory and drive list boxes o load a text file into a rich text box.
7. Function of Command Dialog Box(open, save color font, printer, help options)
8. Design a text editor using Rich Text Box.
9. Design a Screen Saver.
10. Animation of Picture.
11. Use list box, combo box to change the font, font size of the given text.
12. Display a popup menu in the form when you click the right mouse button.
13. Use graphical function to draw a picture and save it.
14. Data base Access using DAO, RDO, ODBC.
15. Compare the Scores of two cricket teams, by the use of graphics.
16. Design a Game(like solitaire).

COMPUTER GRAPHICS LAB

1. Line Drawing Algorithm
2. Circle Drawing Algorithm
3. Transformation – Rotation – Arbitrary point
4. Transformation – Rotation – Origin
5. Transformation – Rotation – Fixed Point
6. Transformation – Translation – Arbitrary point
7. Transformation – Translation – Origin
8. Transformation – Translation – Fixed Point
9. Transformation – Scaling– Arbitrary point
10. Transformation - Scaling – Origin
11. Transformation – Scaling – Fixed Point
12. Windowing
13. Clipping

SEMESTER VI

JAVA AND INTERNET PROGRAMMING

UNIT I

Java – Evaluation – Object Oriented fundamentals – Introduction to Java.

UNIT II

Data types – Operators, Expressions – Flow control - Classes – Package and Interfaces.

UNIT III

String Handling – Exception handling – threads and Synchronization – input output networking.

UNIT IV

Applets – AWT – Imaging.

UNIT V

Introduction to Java script – Data types – Variables – Operators, expressions – statements – functions, date month & type related objects, controlling windows.

Text Books

1. Introduction to Java Programming by E. Balagurusamy
2. Krishnamoorthy & Prabu, New Age Intl Publications

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 - Data type - 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, Pen CGI, BPB Publications, 2000

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

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

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

MULTIMEDIA TECHNOLOGY

UNIT I

Introduction – History of Multimedia – Resources for Multimedia developers – types of product.

Text and graphics: Elements of text data files – Using text in multimedia Application – Hypertext – Elements of graphics – Images and color – Graphics files and application formats – Obtaining images for multimedia use – Using graphics in Applications.

UNIT II

Digital Audio and Video: Characteristics of sound and digital audio – Digital Audio Systems – MIDI – Audio file formats – Using Audio in Multimedia Applications Audio for content – Background as Video – Characteristics of Digital video – Digital video – Date sizing – Video capture and play – back Systems – Computer Animation.

UNIT III

Product Design: Building Blocks – Classes of Products – Content Organizational Strategies – Storyboarding.

UNIT IV

Authoring Tools: Objectives – Categories of Authoring Tools – Selecting the Right Authoring Paradigm.

UNIT V

Multimedia and Internet: The Internet – HTML and Web Authoring – Multimedia Considerations for the Internet – Design Considerations for Web Pages.

Text books:

1. Multimedia Technology and Applications – David Hillman – 1998/Galgotia Publications Pvt.Ltd.,
1. Multimedia making it work – Tay Vaughan TMH 1996.

Reference books:

1. Multimedia in Practice – J.Jeffcoate PHI 1998.

JAVA AND INTERNET PROGRAMMING LAB

1. Arrays and flow control statements.
2. Run time exception And I/O exception.
3. Multi- Threading.
4. Layout Management.
5. GUI Components (Labels, Check box, Menus, Text, etc.)
6. Event Handling (Focus Events, Key Events, Paint Events, Text Events, Mouse Events, Window Events, Etc.)
7. Animation and Images.
8. Java Applet.
9. Java files management methods.
10. Java Streams.
11. JDBC (Java Database Connectivity).

WEB TECHNOLOGY LAB

VB.NET

1. Biggest of three numbers
2. Enumeration
3. Structure Exception handling
4. Display Welcome message
5. Display address of the college
6. Constructor
7. Destructor
8. Inheritance
9. Polymorphism
10. Find factorial and Fibonacci series using Interface

ASP.NET

1. Designing Login Form
2. Show the data in data grid
3. Program using request and response object
4. Program using Cookies
5. Create an advertisement using Ad rotator Control
6. Validator Control
7. String Functions
8. Program using system – data OLEDB
9. Payroll Detail in ASP.NET using Access as Background
10. Generate the Hotspots in the image

INFORMATION SECURITY

UNIT I

Introduction: Security, Attacks, Computer Criminals, Security Services, Security Mechanisms.

UNIT II

Cryptography: Substitution ciphers, Transposition ciphers, Confusion, Diffusion, Symmetric, Asymmetric, Encryption, DES, Uses of Encryption, Hash Function, Key exchange, Digital Signatures, Digital Certificates.

UNIT III

Program Security: Secure Programs, Non malicious program errors, malicious codes virus, Trap doors, Salami attacks, covert channels, Control against program.

UNIT IV

Database Security: Requirements, Reliability, Integrity, Sensitive data, Inference, Multilevel Security.

UNIT V

Security in Networks: Threats in Networks vs. Networks security controls, Firewalls, Intusion detection systems, Secure e-mails.

Text Books:

1. Fourozan

Reference Books:

1. W.Stallings – Network Security Essentials Applications and Standards, 4/E,2010.

MULTIMEDIA LAB (Flash Lab)

1. Animation of any object
2. Morphing using shape tweening
3. Using add motion guide layer
4. Name Conversion using shape tweening
5. Applying color to cradle
6. Create a jumping ball
7. Experiment masking
8. Create a button to draw traffic symbol
9. Using motion tweening
10. Using scale technique change color and size
11. Animation of Moving object