

RATHINAM COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)
COIMBATORE - 21.

B.SC-CS/IT/CT/BCA DEGREE COURSE

SCHEME OF EXAMINATION: CBCS PATTERN

(APPLICABLE TO STUDENTS ADMITTED FROM THE ACADEMIC YEAR 2013 – 2014)

Part	Study Components	Ins. hrs/ week	Examinations				Credit
			Dur.Hrs	CIA	ESE	Total	
SEMESTER-I							
I	Language-I	6	3	25	75	100	4
II	English-I	6	3	25	75	100	4
III	Core 1 : Computing Fundamentals & C programming	4	3	25	75	100	4
III	Core Lab 1 : C Programming lab	4	3	40	60	100	4
III	Core 2: Digital Fundamentals and Architecture	4	3	25	75	100	4
III	Allied-I	4	3	25	75	100	4
IV	Environmental studies*	2	3	--	50	50	2
SEMESTER-II							
I	Language-II	5	3	25	75	100	4
II	English-II	5	3	25	75	100	4
III	Core 3 : Data structures using C++	5	3	25	75	100	4
III	Core lab-2: data structures using C++ Lab	4	3	40	60	100	4
III	Core 4: Operating system	4	3	25	75	100	4
III	Allied-II	5	3	25	75	100	4
IV	Value education – human rights *	2	3	--	50	50	2
SEMESTER-III							
III	Core 5: Java & Mobile Applications	6	3	25	75	100	4
III	Core 6: RDBMS and ORACLE	6	3	25	75	100	4
III	Core Lab-3 Java and Mobile Applications Development Lab	5	3	40	60	100	4
III	Mini Project - Vocational Industrial Training @			-	-	-	-
III	Allied-III Computer Based Optimization Techniques	6	3	25	75	100	4
IV	Skill based Subject : 1	5	3	25	75	100	3

IV	Tamil ** / Advanced Tamil ** /Communicative English *	2	3	--	50	50	2
SEMESTER-IV							
III	Core 7: Web Technology	6	3	25	75	100	4
III	Core Lab 4: Web Technology and Open source LAB	6	3	40	60	100	4
III	Allied-IV	6	3	25	75	100	4
III	Core 8 – Mini Project Viva-voice %	5	3	25	25	50	2
IV	Skill based Subject : 2	5	3	25	75	100	3
IV	Tamil ** / Advanced Tamil ** /Communicative English *	2	3	--	50	50	2
SEMESTER-V							
III	Core9: .Net Technologies	5	3	25	75	100	4
III	Core Lab 5: .Net Programming Lab	5	3	40	60	100	4
III	Core 10: Data Mining and Warehousing	5	3	25	75	100	4
III	Elective-I	4	3	25	75	100	4
III	Elective-II	4	3	25	75	100	4
IV	Placement Training	2	--	--	--	--	--
IV	Skill based Subject : 3	5	3	25	75	100	3
SEMESTER-VI							
III	Core 11: Computer Graphics and Multimedia	6	3	25	75	100	4
III	Core 12 : Cyber Security	6	3	25	75	100	4
III	Elective-III	6	3	25	75	100	4
III	Core 13 - Project Report - Viva-voice #	5	3	100	100	200	8
IV	Placement Training	2	--	--	--	--	--
IV	Skill based Subject : 4	5	3	40	60	100	3
V	Extension Activity **	-	3	50	-	50	2
Total							140

Note

* No Internal Examinations only External Examinations

** Only External Examinations no Internals Examinations

@ Vocational Industrial Training

Theory Papers Internal 25, External 75 & Practical Papers Internal 40, External 60.

% Mini Project report - 25 marks; Viva-voce – 25 marks

Project report - 100 marks; Viva-voce – 100 marks.

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COIMBATORE -21.**

SCHEME OF EXAMINATION : CBCS PATTERN

List of Allied, Elective & Skill Based Subjects

Course: B.Sc Computer Science

SUBJECT	
ALLIED	
Allied-1	Mathematical Structures for Computer Science
Allied-2	Discrete Mathematics
Allied-3	Computer Based Optimization Techniques
Allied-4	Mathematics for Quantitative Aptitude and Verbal reasoning
ELECTIVE	
Elective- I	A. Computer Network and Cryptography B. Artificial Intelligence and Expert Systems C. Software Project Management
Elective- II	1. Software Project Management and Testing 2. E-Commerce 3. Software testing
Elective- III	A. Digital signal processing B. Client / Server Computing C. Compiler Design
Skill Based Subject	
Skill-1	Mobile Hardware and Servicing
Skill-2	Open source
Skill-3	Cloud Computing
Skill-4	Graphics and Multimedia Lab

Course : B.C.A

SUBJECT	
ALLIED	
Allied-1	Mathematical Structures for Computer Science
Allied-2	Discrete Mathematics
Allied-3	Computer Based Optimization Techniques
Allied-4	Mathematics for Quantitative Aptitude and Verbal reasoning
ELECTIVE	
Elective- I	A. Computer Networks B. E-Commerce C. Software testing
Elective- II	A. Computer Security and Cryptography B. Artificial Intelligence and Expert Systems C. Software Project Management
Elective- III	A. Digital signal processing B. Client/Server Technology C. Compiler Design
Skill Based Subject	
Skill-1	Mobile Hardware and Servicing
Skill-2	Open source
Skill-3	Embedded Systems
Skill-4	Graphics and Multimedia Lab

Course : B.Sc(Information Technology)

SUBJECT	
ALLIED	
Allied-1	Mathematical Structures for Computer Science
Allied-2	Discrete Mathematics
Allied-3	Computer Based Optimization Techniques
Allied-4	Mathematics for Quantitative Aptitude and Verbal reasoning
ELECTIVE	
Elective- I	A. Computer Security and Cryptography B. Artificial Intelligence and Expert Systems C. Software Project Management
Elective- II	A. Computer Networks B. E-Commerce C. Software testing
Elective- III	A. Digital signal processing B. Client/Server Technology C. Compiler Design
Skill Based Subject	
Skill-1	Cloud Computing
Skill-2	Open source
Skill-3	Mobile Computing
Skill-4	Mobile Computing Lab

Course : B.Sc(Computer Technology)

SUBJECT	
ALLIED	
Allied-1	Mathematical Structures for Computer Science
Allied-2	Discrete Mathematics
Allied-3	Computer Based Optimization Techniques
Allied-4	Mathematics for Quantitative Aptitude and Verbal reasoning
ELECTIVE	
Elective- I	A. Computer Security Management B. Artificial Intelligence and Expert Systems C. Software Project Management
Elective- II	D. Computer Networks E. E-Commerce F. Software testing
Elective- III	G. Digital signal processing H. Client/Server Technology I. Compiler Design
Skill Based Subject	
Skill-1	WAP & XML
Skill-2	Open source
Skill-3	Microprocessor and ALP
Skill-4	Microprocessor and ALP Lab

Core 1 : Computing Fundamentals & C PROGRAMMING

Goal: To learn about the Computer fundamentals and the C programming language concepts

Objective: On successful completion of this subject the students have the programming ability in C Language

UNIT-I

Introduction to the C Language : The C Language and its Advantages -The Structure of a C Program-Writing C Programs- Building an Executable Version of a C Program - Debugging a C Program - Examining and Running a C Application Program. Data Types and Variables -Data Types- Operands, Operators, and Arithmetic Expressions.

UNIT-II

Input/Output Management: Input/Output Management -The getchar() and putchar() Functions and Single-character I/O -Formatted Input and the scanf() Function -Control-flow Statements. The Control-flow Program Statements -Looping Statements -The Data-checking Process -Modular Programming with Functions -The C Function -Passing Data to Functions - Passing an Address to Modify a Value in Memory -Using Functions in the Checkbook Program -The C Standard Library Functions.

UNIT-III

Arrays, Pointers, and Strings -Arrays -Pointers -Strings -Using Arrays, Strings, and Pointers in the Checkbook Program -Structures and Dynamic Memory Allocation -Structures -Arrays of-Structures -Passing Structures to Functions -Nested Structures -Dynamic Memory Allocation

UNIT-IV

The Preprocessor and Multiple-file Compilation -The C Preprocessor and the #include and #define Directives -The Conditional Compilation Directives -Global Variables and Variable Storage Classes - Program Organization and Multi-file Compilation.

UNIT-V

File Input/Output -Command-line arguments -File Input and Output -Combining Command-line Arguments and File I/O.

TEXT BOOK

1. E Balagurusamy: —COMPUTING FUNDAMENTALS & C PROGRAMMING|| – Tata McGraw-Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.

REFERENCE BOOK

1. Henry Mullish & Huubert L.Cooper: The Sprit of C, Jaico Pub. House, 1996.

2. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.

Core Lab 1 : C PROGRAMMING LAB

1. Write a C program to find the sum, average, standard deviation for a given set of numbers.
2. Write a C program to generate n prime numbers.
3. Write a C program to generate Fibonacci series.
4. Write a C program to print magic square of order n where $n > 3$ and n is odd.
5. Write a C program to sort the given set of numbers in ascending order.
6. Write a C program to check whether the given string is a palindrome or not using pointers.
7. Write a C program to count the number of Vowels in the given sentence.
8. Write a C program to find the factorial of a given number using recursive function.
9. Write a C program to print the student's Mark sheet assuming roll no, name, and marks in 5 subjects in a structure. Create an array of structures and print the mark sheet in the university pattern.
10. Write a function using pointers to add two matrices and to return the resultant matrix to the calling function.
11. Write a C program which receives two filenames as arguments and check whether the file contents are same or not. If same delete the second file.
12. Write a program which takes a file as command line argument and copy it to another file. At the end of the second file write the total i) no of chars ii) no. of words and iii) no. of lines.

Core 2 : Digital Fundamentals and Architecture

Goal: To learn about Computer Fundamentals and its Architecture.

Objective: On successful completion of this subject the students should have Knowledge on Digital circuits, Microprocessor architecture, and Interfacing of various components

Unit - I

Number System and Binary Codes: Decimal, Binary, Octal, Hexadecimal – Binary addition, Multiplication, Division – Floating point representation, Complements, BCD, Excess3, Gray Code.Arithmetic Circuits: Half adder, Full adder, Parallel binary adder, BCD adder, Half subtractor, Full subtractor, Parallel binary subtractor - Digital Logic: the Basic Gates – NOR, NAND, XOR Gates.

Unit - II

Combinational Logic Circuits: Boolean algebra –Karnaugh map – Canonical form 1 – Construction and properties – Implicants – Don't care combinations - Product of sum, Sum of products, simplifications.Sequential circuits: Flip-Flops : RS, D, JK, T - ultiplexers – Demultiplexers – Decoder – Encoder - Counters.

Unit – III

MICROPROCESSOR: Architecture – Bus Organization – Functional diagram and pin out diagram of 8085 - Addressing modes of 8085 – Instruction set of 8085 – I/O Schemes– Peripherals and Interfaces

Unit – IV

Input – Output Organization: Input – output interface – I/O Bus and Interface – I/O Bus Versus Memory Bus – Isolated Versus Memory – Mapped I/O – Example of I/O Interface. Asynchronous data transfer: Strobe Control and Handshaking – Priority Interrupt: Daisy-Chaining Priority, Parallel Priority Interrupt. Direct Memory Access: DMA Controller, DMA Transfer. Input – Output Processor: CPU-IOP Communication.

Unit – V

Memory Organization: Memory Hierarchy – Main Memory- Associative memory: Hardware Organization, Match Logic, Read Operation, Write Operation. Cache Memory: Associative, Direct, Set-associative Mapping – Writing Into Cache Initialization. Virtual Memory: Address Space and Memory Space, Address Mapping Using Pages, Associative Memory Page Table, Page Replacement.

TEXT BOOKS

1. Digital principles and applications, Albert Paul Malvino, Donald P Leach , TMH,1996.
- 2.COMPUTER SYSTEM ARCHITECTURE -M. Morris Mano , PHI.
3. MICROPROCESSORS AND ITS APPLICATIONS-RAMESH S.GOANKAR

REFERENCE BOOKS

1. DIGITAL ELECTRONICS CIRCUITS AND SYSTEMS - V.K. Puri , TMH. 2. COMPUTER ARCHITECTURE , M. Carter , Schaum's outline series, TMH.

Core 3: DATA STRUCTURES USING C++

UNIT – I

Basic concepts of object oriented programming-Benefits of OOP's-Application of OOP-Structure of C++ program-Basic Data type-Derived Data type-User defined data type-Operators in C++,Control Statements, inline function, function Overloading-Specifying a class-defining member function-nesting of member function -array of object-friend function-constructor-parameterized constructor-copy of constructor –destructor.

UNIT – II

Defining operator overloading -overloading unary operator-overloading binary operator-rules for operator overloading-inheritance-single inheritance-multilevel inheritance-multiple inheritance -hierarchal inheritance-hybrid inheritance- virtual base class –polymorphism-pointer-pointer to object-this pointer-virtual function –pure virtual function- File Handling Templates ,Exception handling, Manipulating strings.

UNIT – III

Data Structures & Algorithms : Algorithm, Analysis, Lists, Stacks and queues, Priority queues-Binary Heap-Application, Heaps–hashing-hash tables without linked lists

UNIT – IV

Nonlinear Data Structures : Trees-Binary trees, search tree ADT, AVL trees, Graph Algorithms-Topological sort, shortest path algorithm network flow problems-minimum spanning tree - Introduction to NP - completeness.

UNIT – V

Sorting And Searching : Sorting – Insertion sort, Shell sort, Heap sort, Merge sort, Quick sort, Indirect sorting, Bucket sort, Introduction to Algorithm Design Techniques –Greedy algorithm (Minimum Spanning Tree), Divide and Conquer (Merge Sort), Dynamic Programming (All pairs Shortest Path Problem).

TEXT BOOKS:

1. Mark Allen Weiss, "Data Structures and Algorithm Analysis in C", 3rd ed, Pearson Education Asia, 2007.
2. E. Balagurusamy, " Object Oriented Programming with C++", McGraw Hill Company Ltd., 2007.

REFERENCE BOOK

1. Michael T. Goodrich, "Data Structures and Algorithm Analysis in C++", Wiley student edition, 2007.
2. Sahni, "Data Structures Using C++", The McGraw-Hill, 2006.

3. Seymour, "Data Structures", The McGraw-Hill, 2007.
4. Jean – Paul Tremblay & Paul G.Sorenson, An Introduction to data structures with applications, Tata McGraw Hill edition, II Edition, 2002.

Core Lab 2: Data structures using C++ LAB

1. Program to implement classes, create object and member functions.
2. Program to implement the concept of function overloading.
3. Program to implement the concept of Operator overloading.
4. Program to implement the concept of Inheritance.
5. Program to implement file handling concepts.
6. Implement PUSH, POP operations of stack using Arrays.
7. Implement add, delete operations of a queue using Arrays.
8. Creation, insertion, and deletion in Singly linked list.
9. Write a Program to Convert an Infix Expression to Postfix Expression using Arrays.
10. Perform Tree Traversals for a Binary Tree using Recursion.
11. Write a program to perform Binary Search & Quick sort.
12. Sort the given list of numbers using Merge Sort.

Core 4 : OPERATING SYSTEM

Goal:

Knowledge on various Operating System concepts.

Objective:

Enable the student to get sufficient knowledge on various system resources.

UNIT-I

Introduction: Definition of OS - early History - history of DOS and UNIX operating system Process: Definition of process - process states - process state transition - interrupt processing - interrupt classes - context switching - semaphores - deadlock and definite postponement.

UNIT-II

Storage management: Real storage management strategies - contiguous versus non-contiguous storage allocation - single user contiguous storage allocation - fixed partition multiprogramming - variable partition multiprogramming - multiprogramming with storage swapping. Virtual storage: Virtual storage management strategies - page replacement strategies - working sets - demand paging - paging sets.

UNIT-III

Processor management: Preemptive versus non-preemptive scheduling - priorities -deadline scheduling - FIFO - RR - Quantum size - SJF - SRT - SHN. Distributed computing: Classification of sequential and parallel processing-array processors - dataflow computers - multiprocessing - fault tolerance.

UNIT-IV

Device and information management: Operation of moving head disk storage - need for disk scheduling - seek optimization - FCFS - SSTF - SCAN - RAM disks - optical disks. Files and database systems: File system - function - organization - allocating and freeing space - file descriptor - access control matrix.

UNIT-V

Case studies: DOS - memory management - overlaying - extended and expanded memory - memory allocation - file system and allocation method - internal and external command memory management functions - file management functions. UNIX: Process in UNIX - memory management - I/O systems - file systems and allocation method - semaphores - command systems.

TEXT BOOK

1. H.M.Deital, "An introduction to operating systems", Addison wisely, second edition, 1998.

REFERENCE BOOKS

1. Willam Stallings, "Operating Systems", 5/e PHI/Pearson Education, 1997.
2. Silberschatz, Peterson, Galvin, "Operating System Concepts", Addison Wessely, Fifth Edition, 1998.
3. Charles Crowley, "Operating systems - A Design Oriented Approach", Tata McGraw Hill, 1998.
4. Andrew S. Tannenbaum, "Operating Systems: Design and Implementation", 3/e, PHI, 2006.

5. Mukesh singhal, Niranjana G shivaratri, "Advanced concepts in operating systems", TMG, 2007.

Core 5 : JAVA & MOBILE APPLICATIONS

UNIT I

Object oriented programming concepts – objects – classes – methods and messages – abstraction and encapsulation – inheritance – abstract classes – polymorphism.- Objects and classes in Java – defining classes – methods - access specifiers – static members – constructors – finalize method.

UNIT II

Arrays – Strings - Packages – Java-Doc comments -- Inheritance – class hierarchy – polymorphism – dynamic binding – final keyword – abstract classes.

UNIT III

The Object class – Reflection – interfaces – object cloning – inner classes – proxies - I/O Streams - Graphics programming – Frame – Components – working with 2D shapes.

UNIT IV

J2ME Overview : Java 2 Micro Edition and the World of Java- Inside J2ME- J2ME and Wireless Devices-Small Computing Technology :Wireless Technology- Radio Data Networks- Microwave Technology- Mobile Radio Networks- Messaging- Personal Digital Assistants.

UNIT V

J2ME Architecture and Development Environment : J2ME Architecture- Small Computing Device Requirements- Run Time Environment- MIDlet Programming – Java Language for J2ME - J2ME Software Development Kits - Hello World J2ME Style - Multiple MIDlets in a MIDlet Suite. J2ME Wireless Toolkit J2ME Best Practices and Patterns: The Reality of Working in a J2ME World, Best Practices.

TEXT BOOKS

1. Cay S. Horstmann and Gary Cornell, "Core Java: Volume I – Fundamentals", Eighth Edition, Sun Microsystems Press, 2008.
- 2.J2ME: The Complete Reference, James Keogh, Tata McGrawHill.

REFERENCE BOOKS

1. K. Arnold and J. Gosling, "The JAVA programming language", Third edition, Pearson Education, 2000.
2. Timothy Budd, "Understanding Object-oriented programming with Java", Updated Edition, Pearson Education, 2000.
3. Beginning J2ME: From Novice to Professional, Third Edition, Sing Li, Jonathan B. Knudsen, Apress, 2005
4. Kicking Butt with MIDP and MSA: Creating Great Mobile Applications, 1st edition, J.Knudsen, Pearson

5. C. Thomas Wu, "An introduction to Object-oriented programming with Java", Fourth Edition, Tata McGraw-Hill Publishing company Ltd., 2006.

Core Lab 3: JAVA & MOBILE APPLICATION DEVELOPMENT LAB

1. Programs to implement Overloading, Overriding and Packages.
2. Programs to implement various forms of Inheritance and User Exceptions.
3. Program to implement String Manipulation.
4. Programs to implement Applet and Event Handling using Abstract Window Toolkit (AWT) Package.
5. Program to implement multiple chatting using threads in JAVA (using runnable interface).
6. Programs to implement the use of files and streams.
7. Program for implementing threads synchronization.
8. To develop a Transmission Control Protocol (TCP) client / server application to demonstrate socket programming.
9. To develop a User Datagram Protocol (UDP) client / server application to demonstrate socket programming.
10. Develop an application using AWT components and Java Data Base Connectivity (JDBC).
11. creating a Hello World program Experiment with the most basic features and mobile application interaction concepts (lists, text boxes, buttons, radio boxes, soft buttons, graphics, etc)
12. Create a following menu items in mobile application program.
 - i. cut
 - ii. copy
 - iii. paste
 - iv. delete
 - v. select all
 - vi. unselect all
13. Create a menu in mobile application which has the following options:
 - i. cut - can be on/off
 - ii. copy - can be on/off
 - iii. paste - can be on/off
 - iv. delete - can be on/off
 - v. select all - put all 4 options on
 - vi. unselect all - put all 4 options off
14. Create a mobile slide show which has three slides, which includes only text. Program should change to the new slide after 5 seconds. After the third slide program should returns to the first slide.
15. Create a MIDP application, where the user can enter player name and points. The program saves the information to the record using RMS at MIDP device. Program should also print

out the top 10 player list to the end user. You can use this class in your game if you have your class for saving and reading record sets.

16. Write a sample program to show how to make a SOCKET Connection from J2ME phone.

CORE 6: RDBMS and ORACLE

Goal: Knowledge on Oracle Programming techniques.

Objective: To inculcate knowledge on RDBMS concepts and Programming with Oracle.

UNIT-I

Database Concepts: A Relational approach: Database – Relationships – DBMS – Relational Data Model – Integrity Rules – Theoretical Relational Languages. Database Design: Data Modeling and Normalization: Data Modeling – Dependency – Database Design – Normal forms – Dependency Diagrams – De-normalization – Another Example of Normalization.

UNIT-II

Oracle9i: Overview: Personal Databases – Client/Server Databases – Oracle9i an introduction – SQL *Plus Environment – SQL – Logging into SQL *Plus - SQL *Plus Commands – Errors & Help – Alternate Text Editors - SQL *Plus Worksheet - iSQL *Plus. Oracle Tables: DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.

UNIT-III

Working with Table: Data Management and Retrieval: DML – adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records – retrieving Data from Table – Arithmetic Operations – restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. Functions and Grouping: Built-in functions – Grouping Data. Multiple Tables: Joins and Set operations: Join – Set operations.

UNIT-IV

PL/SQL: A Programming Language: History – Fundamentals – Block Structure – Comments – Data Types – Other Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. Control Structures and Embedded SQL: Control Structures – Nested Blocks – SQL in PL/SQL – Data Manipulation – Transaction Control statements. PL/SQL Cursors and Exceptions: Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT...FOR UPDATE – WHERE CURRENT OF clause – Cursor with Parameters – Cursor Variables – Exceptions – Types of Exceptions.

UNIT-V

PL/SQL Composite Data Types: Records – Tables – arrays. Named Blocks: Procedures – Functions – Packages – Triggers – Data Dictionary Views.

TEXT BOOKS

1. DATABASE SYSTEMS USING ORACLE – Nilesh Shah, 2nd edition, PHI.

REFERENCE BOOKS

1. DATABASE MANAGEMENT SYSTEMS – Arun Majumdar & Pritimoy Bhattacharya, 2007, TMH.
2. DATABASE MANAGEMENT SYSTEMS – Gerald V. Post, 3rd edition, TMH.

Core 7: Web Technology

Goal:

To learn about the web designing fundamentals and web development concepts

Objective:

On successful completion of this subject the students have the ability to develop a web page using HTML and XML

UNIT – I

Introduction to Internet – World Wide Web – Browsers: Introduction – Popular Web Browsers – know your browsers – Electronic Mail : Introduction – E-mail networks and servers – E-mail protocols – Structure of an E-mail.

UNIT – II

Getting Started with HTML: Editing and Viewing HTML Files – Setting Up the Document Structure – Formatting Text by Using Tags – Using Lists and Backgrounds – Creating Hyperlinks and Anchors, tables & frames – Creating forms.

UNIT – III

Style Sheet and Graphics: Introduction to style sheet – Formatting Text by using Style Sheets- Formatting Paragraphs by using Style Sheets – Displaying Graphics.

UNIT-IV

Introduction to Web Technology: Web pages – Tiers – Concept of a Tier – Comparison of Microsoft and Java Technologies – Web Pages – Plug-ins – Forms. Dynamic Web Pages: Need – Magic of Dynamic Web Pages – Overview of Dynamic Web Page Technologies – Overview of DHTML – Common Gateway Interface

UNIT – V

XML: XML basics – Introduction – need for XML – Advantages – Working with an XML Document – Structure of an XML Document – DTD- XML Schema

TEXT BOOKS

1. HTML 5 Step by Step, Faithe Wempen, Prentice Hall of India Private Limited, New Delhi.
2. WEB TECHNOLOGIES TCP/IP to Internet Applications Architectures – Achyut S Godbole & Atul Kahate, 2007 ,TMH
3. “HTML and XML an Introduction”, NIIT, Prentice Hall of India Pvt. Ltd

REFERENCE BOOKS

1. World Wide Web Design with HTML – C. Xavier, 2007, TMH.

Core Lab IV: Web Technology and Open source Lab

1. Write HTML code to develop a web page for giving details of your name, age, address. It contains the different background and foreground color, with different attribute of Font tags like italic, bold, underline etc. and give suitable heading style.
2. Write HTML code to create a WebPages that contains an Image at its left hand side of the page when user clicks on the image; it should open another web page that displays the details of that image. The HREF tag having the attribute ALINK, VLINK etc.
3. Write a HTML program to reload the page which contains an image that should reload automatically for every 5 seconds.
4. Create a html program that import an External Cascading Style Sheet (CSS) where as the style for the html program is defined in CSS file.
5. Design a webpage that should compute one's age on a given date using PHP.
6. Design a webpage in PHP to generate multiplication table for a given number.
7. Write a PHP Program to explain the session and cookies.
8. Design a authentication web page in PHP with MySQL to check user name and Password.
9. Design a HTML page for getting personal details using forms and send the details to another form using POST method and receive and print the details in that form using PHP.
10. Design a Web page for getting details from user and insert the user details in the database using PHP and MySQL.

Core 9: .NET TECHNOLOGIES

UNIT - I

Introduction To Visual Studio.Net IDE: Overview –Menu bar & tool bar – visual studio.NET IDE windows. Introduction To Vb.Net & Asp.Net: Memory conflicts - arithmetic, equality, relational, logical, assignment operators using a dialog to display a message.

UNIT - II

Procedures - Arrays. control structure: If-then – if-then-else – while – do while-loop – do until-loop – case study –For-next – select case – do-loop while – do-loop until – exit.

UNIT - III

Object oriented programming – exception handling– System Level Exceptions – Application level Exceptions- Graphical user interfaces concepts – multi threading – strings, characters & regular expressions.

UNIT - IV

Graphics & Multimedia – files & streams— Single-File, Multiple-File Assemblies– Private Assemblies– Shared Assemblies. XML in .NET: XML basics, attributes, fundamentals of XML classes: Document, text writer, text reader, XML validations, XML in ADO.NET, Data document

UNIT - V

ADO.Net: Object model – programming with ADO.Net –reading & writing with XML files – Reports. NETWORKING: Streams – based sockets & data grams, data structures & collections. Case Study – Creating Web Based Online Examination using Asp.net.

TEXT BOOKS

1. Introduction to VB.net, Deitel & Deitel, Pearson Education, 2004.
2. The Complete Reference in ASP.Net”, Pearson Edition.

Core Lab 5: .NET PROGRAMMING LAB

1. Write a program for calculator using Vb.Net.
2. Write a program for Student list using ADO.Net connection.
3. Write a program for voter list using ADO.Net connection.
4. Write a program for Web page creation using ASP .Net.
5. Write a program for Validation control using ASP .Net.
6. Write a program for E- Shopping using ASP.Net and VB.Net.
7. Write a program for Mouse Event using Vb.Net.
8. Write a program for Stock Maintenance using Data Grid and ADO.Net Connection.
9. Write a program for Report Generation using Crystal Report.
10. Write a program in ASP that makes use of Content Rotator component.
11. Write a program in ASP that makes use of page counter component.
12. Write a program in ASP to get the data of students using forms and stores them in database.
13. Write a program in ASP to perform record navigation using a form.

Core 10: Data Mining & Warehousing

UNIT - I

DATA MINING :Introduction – Data – Types of Data – Data Mining Functionalities – Interestingness of Patterns – Classification of Data Mining Systems – Data Mining Task Primitives –Integration of a Data Mining System with a Data Warehouse – Issues –Data Preprocessing.

UNIT - II

ASSOCIATION RULE MINING AND CLASSIFICATION: Mining Frequent Patterns, Associations and Correlations – Mining Methods – Mining Various Kinds of Association Rules – Correlation Analysis – Constraint Based Association Mining – Classification and Prediction - Basic Concepts - Decision Tree Induction - Bayesian Classification – Rule Based Classification.

UNIT – III

CLUSTERING AND APPLICATIONS AND TRENDS IN DATA MINING Cluster Analysis - Types of Data – Categorization of Major Clustering Methods – Kmeans– Partitioning Methods – Hierarchical Methods - Density-Based Methods – Introduction to Model-Based Clustering Methods – Clustering High Dimensional Data - Outlier Analysis – Data Mining Applications.

UNIT - IV

DATA WAREHOUSING: Data warehousing Components –Building a Data warehouse – Mapping the DataWarehouse to a Multiprocessor Architecture – DBMS Schemas for Decision Support –Data Extraction, Cleanup, and Transformation Tools.

UNIT – V

BUSINESS ANALYSIS :Reporting and Query tools and Applications – Tool Categories – The Need for Applications – Online Analytical Processing(OLAP) – Need –Multidimensional Data Model – OLAP Guidelines – Multidimensional versus Multirelational OLAP – Categories of Tools – OLAP Tools and the Internet.

TEXT BOOKS:

1. Alex Berson and Stephen J. Smith, “ Data Warehousing, Data Mining & OLAP”, Tata McGraw – Hill Edition, Tenth Reprint 2007.
2. Jiawei Han and Micheline Kamber, “Data Mining Concepts and Techniques”, Second Edition, Elsevier, 2007.

REFERENCE BOOKS:

1. Pang-Ning Tan, Michael Steinbach and Vipin Kumar, “ Introduction To Data Mining”, Person Education, 2007.

2. K.P. Soman, Shyam Diwakar and V. Ajay “, Insight into Data mining Theory and Practice”, Easter Economy Edition, Prentice Hall of India, 2006.
3. G. K. Gupta, “ Introduction to Data Mining with Case Studies”, Easter Economy Edition, Prentice Hall of India, 2006.
4. Daniel T.Larose, “Data Mining Methods and Models”, Wile-Interscience, 2

Core 11 : COMPUTER GRAPHICS AND MULTIMEDIA

Goals :

Is to provide a comprehensive coverage of principles of multimedia communications, including leading algorithms for various applications.

Objectives

- To provide basic knowledge in Graphics concepts and its applications.
- To introduce Multimedia trends and its applications.

UNIT - I

Introduction : Overview of Graphics System - Bresenham technique –DDA - Line Drawing and Circle Drawing Algorithms - DDA - Line Clipping - Text Clipping.

UNIT - II

2D Transformations : Two dimensional transformations – Scaling and Rotations - Interactive Input methods - Polygons - Splines – Bezier Curves - Window view port mapping transformation.

UNIT - III

3D Transformations : 3D Concepts - Projections – Parallel Projection - Perspective Projection – Visible Surface Detection Methods - Color models – XYZ-RGB-YIQ-CMY-HSV Models - animation – Key Frame systems - General animation functions - morphing.

UNIT - IV

Overview Of Multimedia : Multimedia hardware & software - Components of multimedia – Text, Image – Graphics – Audio – Video – Animation – Authoring.

UNIT - V

Multimedia Systems And Applications : Multimedia communication systems – Data base systems – Synchronization Issues – Presentation requirements – Applications – Video conferencing – Virtual reality – Interactive video – video on demand

TEXT BOOKS

1. Hearn D and Baker M.P, “Computer graphics – C Version”, 2nd Edition, Pearson Education, 2004,(unit 1,2 &3).
2. Ralf Steinmetz, Klara Steinmetz, “Multimedia Computing, Communications and Applications”, Pearson education, 2004(unit 4 & 5).

REFERENCE BOOKS

1. Siamon J. Gibbs and Dionysios C. Tsichritzis, “Multimedia programming”, Addison Wesley, 1995.
2. John Villamil, Casanova and Leony Fernandez, Eliar, “Multimedia Graphics”, PHI, 1998.

Core Lab 6: Graphics and Multimedia Lab

1. Design an advertisement in Flash with different effects like Tint, Tweening, Shape Tweening and Motion Tweening.
2. Develop a documentary film of your choice and integrate sound effects using flash.
3. Develop game software that interacts with the keyboard or mouse using flash script.
4. Write a program in Flash Fade In and Fade Out Effect
5. Write a program in photoshop to create Engraving Text effect.
6. Make a Design in photoshop to create Rain Effect and Rainbow Effect for image
7. Make a Design in photoshop to create Metal Polish Effect
8. Make a Design in photoshop to create Picture in text
9. Make a Design in photoshop to create Cloth Effect for Images.
10. Make a design in photoshop to illustrate morphing effect.

Core 12 :Cyber Security

Unit –I

Security principles, threats and attack techniques:- Introduction to security- Information security- Security triad: Confidential, Integrity, Availability- Focus of control- Security threats and attacks- Security management.

Unit - II

Authentication and access control:- Identification-Authentication-Authentication by passwords- Protecting passwords-Access control structures-Types of access control.

Unit - III

Lattice and reference monitors:-Security levels and categories- Lattice diagram- Reference monitors- Security kernel- Hardware security features -Protecting memory.

Unit - IV

Authentication in distributed systems- Key establishments and authentication- Kerberos- Public key infrastructures- Single sign-on Software security and database security:-Memory management- Data and code-Relational databases-Access control in databases-Statistical database security.

UNIT - V

Network Security : Electronic Mail Security – IP Security – Web Security. System Level Security : Intrusion detection – Viruses and related Threats – Virus Counter measures – Firewall Design Principles – Trusted Systems.

REFERENCE BOOK

1. Computer Security, 2nd ed. Dieter Gollmann Publisher: John Wiley & Sons, 2006 Cyber Security – Andrew S. Tanenbaum, 4th edition, PHI.

Allied-1 : MATHEMATICAL STRUCTURES FOR COMPUTER SCIENCE

Goal:

To learn about the mathematical structures for computer based applications

Objective:

On successful completion of this subject the students should have :-Understanding the concepts of mathematics-Learning applications of statistical and numerical methods for Computer Science.

UNIT – I

Matrices – Introduction – Determination – Inverse of a matrix – Rank of a Matrix– Eigen value Problems.

UNIT – II

System of Simultaneous Linear algebraic Equation – Gauss elimination, Gauss Jordan, Gauss Seidal methods. The solution of Numerical Algebraic & Transcendental equation – Bisection method – Newton – Rapson method – false position method.

UNIT – III

Numerical Differentiations – Newton's forward Difference - Backward Difference – Startling formula Numerical Integration – Trapezoidal Rule & Simpson's rule Numerical solutions of ordering differential Equations – Taylor series & Runge kutta method.

UNIT – IV

Measures of central tendency – Mean Median and Mode – Relationship among mean media and mode. Measures of dispersion – Range, quartile deviation, mean deviation and Standard deviation

UNIT – V

Regression and Correlation – Types of relationship – Linear regression – Correlation – Coefficient of correlation – Regression equation of variables – Discrete Probability distribution – Uniform, Binomial & poisson Distribution.

TEXT BOOKS

1. Engineering Mathematics Volume II – Dr M.K. Venkataraman NPC(Unit I).
2. Numerical Methods in science & Engineering - M.K. Venkataraman – NPC , Revised Edition -2005 (Unit II & III).
3. Business Statistics - S.P. Gupta & M.P. Gupta Sultan Chand and Sons (Unit IV & V)

REFERENCE BOOKS

1. Numerical methods - E. Balagurusamy Tata MC Graw Hill.
2. Fundamental of Mathematical statistics S C Gupta, V. K. Kapoor Sultan Chand and Sons

Allied -2 : DISCRETE MATHEMATICS

UNIT – I

Set theory-Introduction-Set & its Elements-Set Description-Types of sets- Venn-Euler Diagrams-Set operations & Laws of set theory-Fundamental products-partitions of sets-minsets- Algebra of sets and Duality-Inclusion and Exclusion principle.

UNIT – II

Mathematical logic – Introduction- propositional calculus –Basic logical operations-Tautologies-Contradiction-Argument-Method of proof- Predicate calculus.

UNIT – III

Relations –Binary Relations –Set operation on relations –Types of Relations – Partial order relation – Equivalence relation – Composition of relations – Functions – Types of functions – Invertible functions – Composition of functions.

UNIT – IV

Languages – Operations on languages – Regular Expressions and regular languages – Grammar – Types of grammars – Finite state machine – Finite – State automata.

UNIT – V

Graph Theory – Basic terminology – paths, cycle & Connectivity – Sub graphs – Types of graphs – Representation of graphs in compute memory - Trees – Properties of trees – Binary trees – traversing Binary trees – Computer Representation of general trees.

TEXT BOOKS

1. Discrete Mathematics – J.K. Sharma Second Edition – 2005 , Macmillan India Ltd.(UNIT I TO V).

REFERENCE BOOKS

1. Discrete Mathematics Structures with Applications to computer science - J. P Tremblay R Manohar – Mc Graw Hill International Edition.

2.Discrete Mathematics – Dr M. K. Venketaramen, Dr N.Sridharan, N.Chandarasekaran – The National publishing Company Chennai.

Allied 3 : COMPUTER BASED OPTIMIZATION TECHNIQUES

Goal:

To learn about the managerial concepts like decision making, optimization etc.

Objective:

On successful completion of this subject the students should have:

- Understanding various mathematical applications in industries.
- Decision making for real time environment.

UNIT-I

Introduction: Definition of OR- Scope, phases and limitation of OR.Linear Programming - Mathematical Model assumption of linear Programming – Graphical method - Principles of Simplex method, Big-M Method.

UNIT-II

Transportation problem and assignment problem - Traveling Salesman Problem.

UNIT-III

Game Theory - Concept of Pure and Mixed Strategies – Solving 2 x 2 matrix with and without saddle point - n x 2 - 2 x m games. Replacement models - Elementary replacement models - present value - rate of return - depreciation - Individual replacement – Group replacement.

UNIT-IV

Queuing Theory - definition of waiting line model - Queue discipline - traffic intensity - poisson arrival – Birth death process - Problem from single server: finite and infinite population model – Problems from multi server: finite and infinite population model.

UNIT-V

PERT & CPM - Network representation - backward pass - Forward pass - computation - Pert Network - Probability factor.

TEXT BOOKS

1. OPERATIONS RESEARCH - Manmohan, P.K. Gupta, Kanthiswarup, S. CHAND & SONS - 1997.

REFERENCE BOOKS

1. OPERATIONS RESEARCH - Hamdy A Taha, Pearson Education, 7th edition, 2002
2. PROBLEMS IN OPERATIONS RESEARCH – P.K. Gupta, D.S. Hira, S. Chand Pub

Allied - 4: Mathematics for Quantitative Aptitude and verbal reasoning

Unit - I

Aptitude: Area-Average-Calendar-Chain Rule-Puzzles

Unit – II

Aptitude: Partnership – Percentage - Pipes and Circumstances - Problems on age

Unit – III

Aptitude: Problems on boat and steam – Ratio - Simple Interest - Time and work

Unit - IV

Reasoning: Mental Ability and logical reasoning: Analogy Test - Series Test-Same Class (Odd) Test-Logical Venn Diagram - Syllagism.

Unit -V

Reasoning: Analytical Reasoning-Mirror Images-Water Image (Number Letter Figure) - Completion of Incomplete Pattern - Grouping of Identical figures.

Text Book

1. Hand book on “Mental Ability and Logical Reasoning” by Bharathiar University, Coimbatore.

Reference Books

1. A Modern Approach to Verbal and non verbal reasoning, Revised Edition, S.Chand, author- Dr.R.S.Aggarwal.
2. Quantitative Aptitude, S.Chand, company limited , Author : Dr. R.S.Aggarwal.
3. Mental ability and Quantitative Aptitude, 2 Edition author: Edgar Thorpe

Elective – COMPUTER NETWORK AND CRYPTOGRAPHY

UNIT-I

Network Hardware: LAN–WAN–MAN–Wireless–Home Networks. Network Software: Protocol Hierarchies–Design Issues for the Layers–Connection-oriented and connectionless services–Service Primitives–The Relationship of services to Protocols. Reference Models: OSI Reference Model–TCP/IP reference Model–Comparison of OSI and TCP/IP–Critique of OSI and protocols–Critique of the TCP/IP Reference model.

UNIT-II

Introduction to PHYSICAL LAYER-Guided Transmission Media: Magnetic Media–Twisted Pair–Coaxial Cable–Fiber Optics. Wireless Transmission: Electromagnetic Spectrum–Radio Transmission–Microwave Transmission. Introduction to DATA-LINK LAYER: Error Detection and correction–Elementary Data-link Protocols–Sliding Window Protocols.

UNIT - III

Introduction : OSI Security Architecture - Classical Encryption techniques – Cipher Principles – Data Encryption Standard – Block Cipher Design Principles and Modes of Operation - Evaluation criteria for AES – AES Cipher – Triple DES – Placement of Encryption Function – Traffic Confidentiality.

UNIT – IV

Public Key Cryptography : Key Management - Diffie-Hellman key Exchange – Elliptic Curve Architecture and Cryptography - Introduction to Number Theory – Confidentiality using Symmetric Encryption – Public Key Cryptography and RSA.

UNIT- V

Authentication And Hash Function : Authentication requirements – Authentication functions – Message Authentication Codes – Hash Functions – Security of Hash Functions and MACs – MD5 message Digest algorithm - Secure Hash Algorithm – RIPEMD – HMAC Digital Signatures – Authentication Protocols – Digital Signature Standard.

TEXT BOOK

1. William Stallings, “Cryptography And Network Security – Principles and Practices”, Prentice Hall of India, Third Edition, 2003.

REFERENCE BOOKS

1. Atul Kahate, “Cryptography and Network Security”, Tata McGraw-Hill, 2003.
2. Bruce Schneier, “Applied Cryptography”, John Wiley & Sons Inc, 2001.

3. Charles B. Pfleeger, Shari Lawrence Pfleeger, "Security in Computing", Third Edition, Pearson Education, 2003.

Elective – ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

GOAL: To Acquire Knowledge on various AI Techniques and Expert Systems.

OBJECTIVE: To have enriched knowledge regarding heuristic search, Knowledge representation and Expert systems.

UNIT – I

Introduction to AI and problem solving concepts: Definition- pattern recognition-production systems – problem and production system characteristics – two-pail problem-analysis of AI techniques – criteria for success

UNIT – II

Knowledge representation – formal and non-formal logic: Representation evaluation criteria -level of representation -formal logic schemes -resolutions -predicate and propositional logic -conversion to clause form -semantic networks-frames-scripts-production system

UNIT – III

Problem solving strategies dealing with uncertainty: Defining the problem – control strategies – exhaustive search – generate and test-space transformation models- forward versus backward reasoning -matching – weak methods – hill climbing -breadth and depth first searches – search algorithms.

UNIT- IV

Expert system development process and knowledge acquisition: Definition – analysis of expert system problem solving – role and analysis of knowledge – architecture of the expert system – problem selection – formalization -implementation –evaluation.

UNIT – V

Knowledge acquisition techniques- cognitive behavior – knowledge representation development. Expert system tools: Expert system shells -narrow tools -large hybrid expert system tools -PC based expert system tools knowledge acquisition tools.

Text book

- a. Artificial Intelligence – Elaine Rich, McGraw Hill.
- b. Principles of Artificial Intelligence – Nils J. Nilsson, Springer Verlag.
- c. Introduction to Artificial Intelligence – Charnaik & McDermott, Addison Wesley.

References

1. Introduction to AI & Expert System – D. W. Patterson, Prentice hall of India.

2. Principles of Artificial Intelligence& Expert Systems Development – David W.Rolston, Tata McGraw Hill.

Elective – SOFTWARE PROJECT MANAGEMENT AND TESTING

Goals:

- Uncover the error in the software/project.
- Uncover the error in design document.
- Found the compatibility with hardware resources.
- Found the risk.
- Deliver the good Software/ product to the end customer.

Objectives:

- Find as much as bugs (or errors) in Software/Project in a given time line.
- Verify all the functionality in the Software/Project with the accepted user requirements.
- Test the quality of the project using minimal effort and cost.
- Generate high quality and effective test cases which help to found major issues

UNIT - I

Introduction To Software Project Management: Project Definition – Contract Management – Activities covered By Software Project Management – Overview of Project Planning – Stepwise Project Planning. Project Evaluation : Strategic Assessment – Technical Assessment – Cost Benefit Analysis –Cash Flow Forecasting – Cost Benefit Evaluation Techniques.

UNIT - II

Activity Planning and Monitoring : Objectives – Project Schedule – Sequencing and Scheduling Activities –Network Planning Models. Monitoring And Control : Creating Framework – Collecting The Data – Visualizing Progress – Cost Monitoring – Earned Value – Prioritizing Monitoring – Getting Project Back To Target – Change Control – Managing Contracts – Introduction – Types Of Contract – Stages In Contract Placement – Typical Terms Of A Contract – Contract Management – Acceptance.

UNIT - III

Software Development Life Cycle models: Phases of Software project –Quality, Quality Assurance, Quality control – Testing, Verification and Validation. White-Box Testing: Static Testing – Structural Testing. Black-Box Testing: What is Black-Box Testing? - Why Black-Box Testing? –When to do Black-Box Testing? – How to do Black-Box Testing? - Integration Testing: Integration Testing as Type of Testing.

UNIT- IV

System and Acceptance Testing: system Testing Overview - Functional testing - Non-functional Testing – Acceptance Testing – Summary of Testing Phases. Test management: Test organization,

Test plans, estimates, and strategies, Test progress monitoring and control, Configuration management, Risk and testing.

UNIT - V

Selecting and Installing Software Testing tools: Testing tools-hammers of testing, Selecting and using the test tools, Appointing managers for testing tools. Determining Software Testing Techniques: Testing techniques /tool selection process, Selecting techniques/tools.

TEXT BOOK

1. Bob Hughes, Mike Cotterell, "Software Project Management", Third Edition, Tata McGraw Hill, 2004.
2. SOFTWARE TESTING Principles and Practices – Srinivasan Desikan & Gopalswamy Ramesh, 2006, Pearson Education.
3. Software Testing Foundations, 2nd Edition By Hans Schaefer, Andreas Spillner, Tilo Linz, Shroff Publishers and Distributors.

REFERENCE BOOKS

1. Ramesh, Gopalswamy, "Managing Global Projects", Tata McGraw Hill, 2001.
2. Royce, "Software Project Management", Pearson Education, 1999.
3. Jalote, "Software Project Management in Practice", Pearson Education, 2002.

Elective – E-COMMERCE

Goals :

To enable the students to understand the techniques of e-Commerce for Business Application.

Objectives:

After the successful completion of the course the student must be aware of techniques in the application of e-Commerce.

UNIT- I

Introduction : Traditional commerce and E commerce – Internet and WWW – role of WWW – value chains – strategic business and Industry value chains – role of E-commerce.

UNIT - II

Infrastructure For E Commerce : Packet switched networks – TCP/IP protocol script – Internet utility programmes – SGML, HTML and XML – web client and servers – Web client/server architecture – intranet and extranets.

UNIT - III

Web Based Tools For E Commerce : Web server – performance evaluation - web server software feature sets – web server software and tools – web protocol – search engines – intelligent agents – EC software – web hosting – cost analysis.

UNIT - IV

Security : Computer security classification – copy right and Intellectual property electronic commerce threats – protecting client computers – electronic payment systems – electronic cash – strategies for marketing – sales and promotion – cryptography – authentication.

UNIT - V

Intelligent Agents : Definition and capabilities – limitation of agents – security – web based marketing – search engines and Directory registration – online advertisements – Portables and info mechanics – website design issues.

TEXT BOOKS

1. Ravi Kalakos, “ Electronic Commerce”, Pearson Education.
2. Gary P Schneider “Electronic commerce”, Thomson learning & James T Peny Cambridge USA, 2001.
3. Manly Greenstein and Miklos “Electronic commerce” McGraw-Hill, 2002.

REFERENCE BOOKS

1. Efraim Turvan J.Lee, David kug and chung, "Electronic commerce" Pearson Education Asia 2001.
2. Brenda Kienew E commerce Business Prentice Hall, 2001.

Elective – DIGITAL SIGNAL PROCESSING

UNIT - I

INTRODUCTION - Classification of systems: Continuous, discrete, linear, causal, stable, dynamic, recursive, time variance; classification of signals: continuous and discrete, energy and power; mathematical representation of signals; spectral density; sampling techniques, quantization, quantization error, Nyquist rate, aliasing effect. Digital signal representation.

UNIT - II

DISCRETE TIME SYSTEM ANALYSIS : Z-transform and its properties, inverse z-transforms; difference equation – Solution by z-transform, application to discrete systems - Stability analysis, frequency response – Convolution – Fourier transform of discrete sequence – Discrete Fourier series.

UNIT - III

DISCRETE FOURIER TRANSFORM & COMPUTATION : DFT properties, magnitude and phase representation - Computation of DFT using FFT algorithm – DIT & DIF - FFT using radix 2 – Butterfly structure.

UNIT - IV

DESIGN OF DIGITAL FILTERS : FIR & IIR filter realization – Parallel & cascade forms. FIR design: Windowing Techniques – Need and choice of windows – Linear phase characteristics. IIR design: Analog filter design - Butterworth and Chebyshev approximations; digital design using impulse invariant and bilinear transformation - Warping, prewarping - Frequency transformation.

UNIT – V

DIGITAL SIGNAL PROCESSORS : Introduction – Architecture – Features – Addressing Formats – Functional modes - Introduction to Commercial Processors

TEXT BOOKS

1. J.G. Proakis and D.G. Manolakis, 'Digital Signal Processing Principles, Algorithms and Applications', Pearson Education, New Delhi, 2003 / PHI.
2. S.K. Mitra, 'Digital Signal Processing – A Computer Based Approach', Tata McGraw Hill, New Delhi, 2001.

Elective - CLIENT / SERVER COMPUTING

Goal: Knowledge on Client / Server Concepts and various components of client / server Applications.

Objective: To inculcate knowledge on Client / Server concepts.

UNIT - I

Client – Server computing – What is Client / Server ? – File servers, Database servers, transaction servers, Groupware servers, Object servers, Web servers – FAT servers or client / server – Client / Server building blocks.

UNIT - II

Client / Servers and operating systems – The Anatomy of a server program – Needs of Client / server from an OS – server scalability – Client anatomy – Client and server OS trends – Client OS and Server OS. NOS: Creating the single system image – Remote Procedure Calls (RPC) – Messaging and Queueing: The MOM Middleware.

UNIT - III

SQL Database Servers: What does SQL do ? – The ISO standards – What does a database server do ? – Stored procedures, Triggers and Rules. Data warehouses – OLTP (OnLine Transaction Processing) – Decision Support Systems (DSS) – Executive Information System (EIS) – comparing Decision Support and OLTP systems – Production vs Information Databases – The data warehouse.

UNIT - IV

Client / Server Transaction Processing – The ACID properties – Transaction Models – TP monitors – Client / Server groupware – The components of Groupware. Distributed Objects, CORBA style – Object management architecture – Compound Documents – The compound document framework- Web client / server – URL – Shortest HTML tutorial – HTTP – 3 tier -client / server – HTML web based forms.

UNIT - V

The Server : Categories of Servers – Features of Server Machines – Classes of Server Machines – Server Environment : N/W Management Environment – N/W Computing Environment – Extensions – Network Operating System – Loadable Module. Server Operating System : OS/2 2.0 – Windows New Technology.

Text Book

1. Robert Orfali, Dan Harkey & Jeri Edwards, “ The Essential Client / Server Survival Guide”, Galgotia Publication Private Limited, Second Edition, 2002.

2. Dawna Travis Dewire –“Client / Server Computing “ – Tata McGraw Hill.

Elective – Compiler Design

UNIT - I

Formal Language and Regular Expressions: Languages, Definition Languages regular expressions, Finite Automata – DFA, NFA. Conversion of regular expression to NFA, NFA to DFA. Applications of Finite Automata to Compiler Construction- lexical analysis, Construction of lexical analyse using LEX tool. Phases of Compilation and A simple One-Pass Compiler.

UNIT - II

Context Free grammars and parsing: Context free grammars, derivation, parse trees, ambiguity, LL(1) parsing. Bottom up parsing handle pruning LR Grammar Parsing, LALR parsing, YACC programming specification.

UNIT - III

Semantics : Syntax directed translation, S-attributed and L-attributed grammars, Intermediate code – abstract syntax tree, translation of simple statements. Context Sensitive features. Type checking, type conversions, equivalence of type expressions, overloading of functions and operations.

UNIT- IV

Run time storage: Storage organization, storage allocation strategies scope access to new local names, parameters. Code optimization: Principal sources of optimization, optimization of basic blocks, peephole optimization

UNIT - V

Global optimizations-flow graphs, Data flow analysis of flow graphs. Code generation: Machine dependent code generation,. Using DAG representation of Blocks.

TEXT BOOK

1. Compilers Principles, Techniques and Tools Aho, Ullman, Ravisethi, Pearson Education.
2. Introduction to Automata Theory, Languages and Computation - Hopcroft, Rajeev Motwani and Ullman, 3rd Edition, Pearson Education.

REFERENCE BOOK

1. Introduction to Theory of computation.Sipser,2nd Edition,Thomson.
2. Introduction to Formal Languages and Automata Theory and Computation – Kamala Krithivasan and Rama R, Pearson.
3. Modern Compiler Construction in C , Andrew W.Appel Cambridge University Press.

Elective - NETWORK SECURITY AND MANAGEMENT

UNIT - I

Introduction: Why Network Security is needed – Management principles – Security principles - Network management - Security attacks – Qualities of a Good Network. Organizational Policy and Security: Security policies, Standards and Guidelines – Information Policy – Security Policy - Physical Security – Social Engineering – Security Procedures – Building a Security Plan. Security Infrastructure: Infrastructure Components – Goals of Security Infrastructure – Design Guidelines – Security Models.

UNIT - II

Cryptography: Terminology and background – Data Encryption Methods – Cryptographic Algorithms- Secret Key Cryptography - Public key cryptography – Message Digest – Security Mechanisms – Speech Cryptography. Hardware and Software Security: Hardware security – Smart Card – Biometrics – Virtual Private Networks (VPNs) - Trusted Operating Systems – Pretty Good Privacy (PGP) – Security Protocols. Database Security: Introduction to Database – Characteristics of a Database Approach – Database Security Issues - Database Security – Vendor-Specific Security – Data Warehouse Control and Security.

UNIT -III

Intrusion Detection Systems: What is not ad IDS – Infrastructure of IDS – Classification of Intrusion Detection Systems – Host-Based IDS – Network-Based IDS - Anomaly Vs Signature Detection – Manage an IDS – Intrusion Detection Tools – IDS Products and Vendors. Network Security: Fundamental Concepts – Identification and Authentication – Access Control – A Model for Network Security – Malicious Software – Firewalls.

UNIT - IV

Network Management: Goal of Network Management – Network Management Standards – Network Management Model – Infrastructure for Network Management - Simple Network Management Protocol (SNMP). Security Management: Security Plan - Security Analysis - Change Management - Disaster Recovery - Systems Security Management - Protecting Storage Media-Protection of System Documentation -Exchanges of Information and Software – Security Requirements of Systems.

UNIT - V

Electronic Mail Policy: Electronic Mail – What are the E-mail threats that organization's face - Why do you need an E-mail Policy - How do you create an E-mail Policy - Publishing the E-mail Policy - University E-mail Policy. Security of Internet Banking Systems: Introduction Banking System – Security Problem – Methodology for Security Problem – Schematic flow of Internet Banking – A layered approach to security.

TEXT BOOKS:

Network Security and Management, Brijendra singh, PHI 2007.

Skill - Mobile Hardware and servicing

Goals :

To enable the students to learn the concepts create a hardware system that allows for long-term physical activity measurement on *mobile* phones.

Objectives :

On successful completion of the course the students should have: Understanding of mobile devices internals and capabilities.

Unit – I

Introduction to Mobile Phone. Basic Electronics- Current,, Voltage, Resistors, Transistor, Capacitor, Diode, Inductor / Coil, Transformer, Integrated Circuit, Speaker / Ringer, Microphone, Vibrate Motor, Display, Drivers, Power Switch, Fuse- Using Multimeter, Real Time Clock and Quartz Crystal- Construction of Battery Booster, Charger and its uses - Assembling and Disassembly of Mobile Phone.

Unit – II

Basic and Special Components of Mobile Phone.- Checking the Basic Component of Mobile Phone and its Faults.- Technique of Soldering and using SMD Rework Station.- Water Damage and Washing of Mobile Phone with CTC.

Unit - III

Introduction to SMD Components. - Testing of SMD components.- BGA IC Reballing and Installing.- Installing and Removing Connector, Display flex, Folding and Sliding Handset -Flex Cable.- Circuit Tracing of Different Section of Mobile Phone- Parts and working process, Different Models and Series of Nokia Mobile and their differences- Different ICs and its Uses-Checking Shorting and Technique to Remove- Hot and Cold Testing- Voltage Tracing and different volts used in Mobile Phone- Jumpers and its Technique- Dead set Repairing- Fault Findings.

Unit - IV

Installation of UFS: Infinity Box and Jaf -Software Upgradation Practice- Virus removal, Master Reset Unlocking of various codes e.g. Security, SimFlashing of Various Mobiles Phones- Problem solved by software flashing -How to use Mobile phone Device -Like Bluetooth, infrared etc-Downloading Screens Savers -Downloading Ring tones- Downloading Picture/Wallpapers -Sim Locked, Sim Rejected.

Unit -V

Installation Card- Chip Installation -Check of Voltages In a Battery Of A Mobile Phone.-Use of SMD Rework Station.-Triggering of Batteries-Chip Level Servicing of Components: Power Amplifiers(PF), Audio I.C (COBBA)-CPU (MAD), Power Supply I.C-Charging Control I.C(CHAPS). RF Signal Processor I.C.- phone Troubleshooting

Text Books

1. Marehall " Mobile Hardware ", TMGH

Reference Book

1. Daniel C T.. Mobile systems, Addison Wesley 1993. 2. Thomas Penny,

Skill - Open Source

Goal :

To learn about the open source Technology and open source web development.

Objective:

On successful completion of this subject the students have the ability to develop a web site using the open source software like PHP & MYSQL .

UNIT – I

Introducing PHP – Basic development Concepts – Creating first PHP Scripts – Using Variable and Operators – Storing Data in variable – Understanding Data types – Setting and Checking variables Data types – Using Constants – Manipulating Variables with Operators.

UNIT – II

Controlling Program Flow: Writing Simple Conditional Statements - Writing More Complex Conditional Statements – Repeating Action with Loops – Working with String and Numeric Functions. Working with Arrays: Storing Data in Arrays – Processing Arrays with Loops and Iterations – Using Arrays with Forms - Working with Array Functions.

UNIT – III

Working with Dates and Times - Using Functions and Classes: Creating User-Defined Functions - Creating Classes – Using Advanced OOP Concepts. Advanced concepts in PHP : Cookies – sessions – server variables.

UNIT – IV

AJAX Basics : Introduction to Ajax, AJAX examples. AJAX XMLHttpRequest : XHR Create object, XHR Request, XHR Response, XHR readyState. AJAX Advanced : AJAX with PHP, AJAX Database.

UNIT – V

Working with Database and SQL : Introducing Database and SQL- Using MySQL- insert – update – delete – join – group by – aggregate functions.

TEXT BOOKS

1. PHP A Beginner's Guide —, VIKRAM VASWANI, Tata McGraw-Hill (Unit 1, 2, 3).
2. K. Meena , R. Sivakumar , A.B. Karthick Anand Babu“Web programming using PHP and MySQL” - Himalaya Publishing House – 2011 (Unit - 5)
3. Dave Crane, Eric Pascarella “Ajax in Action” Dreamtech Press- 2006

REFERENCE BOOKS

1. The PHP Complete Reference – Steven Holzner – Tata McGraw-Hill Edition.
2. Spring into PHP5 – Steven Holzer, Tata McCraw Hill Edition

Skill - CLOUD COMPUTING

GOAL:

The goal of cloud computing is to apply traditional supercomputing, or high-performance computing power, normally used by military and research facilities, to perform tens of trillions of computations per second.

OBJECTIVE:

To update knowledge about recent model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services)

UNIT - I

INTRODUCTION TO CLOUD COMPUTING : Cloud Computing – History of Cloud Computing – Cloud Architecture – Cloud Storage – Why Cloud Computing Matters – Advantages of Cloud Computing – Disadvantages of Cloud Computing – Companies in the Cloud Today – Cloud Services.

UNIT - II

DEVELOPING CLOUD SERVICES : Web-Based Application – Pros and Cons of Cloud Service Development – Types of Cloud Service Development – Software as a Service –Platform as a Service – Web Services – On-Demand Computing – Discovering Cloud Services Development Services and Tools – Amazon Ec2 – Google App Engine – IBM Clouds.

UNIT - III

CLOUD COMPUTING FOR EVERYONE : Centralizing Email Communications – Collaborating on Schedules – Collaborating on To-Do Lists – Collaborating Contact Lists – Cloud Computing for the Community – Collaborating on Group Projects and Events – Cloud Computing for the Corporation.

UNIT - IV

USING CLOUD SERVICES : Collaborating on Calendars, Schedules and Task Management- Exploring Online Scheduling Applications – Exploring Online Planning and Task Management – Collaborating on Event Management – Collaborating on Contact Management – Collaborating on Project Management – Collaborating on Word Processing - Collaborating on Databases – Storing and Sharing Files.

UNIT - V

OTHER WAYS TO COLLABORATE ONLINE :Collaborating via Web-Based Communication Tools – Evaluating Web Mail Services – Evaluating Web Conference Tools – Collaborating via Social Networks and Groupware – Collaborating via Blogs and Wikis .

TEXT BOOK

1. Michael Miller, Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online, Que Publishing, August 2008.

2. Haley Beard, Cloud Computing Best Practices for Managing and Measuring Processes for On-demand Computing, Applications and Data Centers in the Cloud with SLAs, Emereo Pty Limited, July 2008.

Skill - Embedded system

Goals:

Build and test an embedded system This course will cover the design of embedded systems from both a hardware and a software perspective. To enable students to design and implement an embedded system through the use of an interactive development environment (IDE) and embedded computer technology.

Objectives:

- Understand the nature of embedded software systems and their characteristics.
- To explain the issues associated with the selection of programming language for a range of possible embedded system applications.
- To demonstrate the ability to write embedded systems software that communicates effectively with a range of hardware devices.

UNIT - I

Introduction to Embedded System: An Embedded System – Processor in the System – Other Hardware units – Software embedded into a system – Exemplary embedded system – Embedded system on chip and in VLSI circuit.

UNIT - II

Processor and Memory organization: Structural units in a processor – Processor selection – Memory devices – Memory selection - Allocation of memory – DMA – Interfacing processor, memories and I/O devices.

UNIT -III

Devices and buses for device networks: I/O devices – Timer and counting devices – Serial communication – Host system. Device drivers and Interrupts servicing mechanism: Device drivers – Parallel port device drivers – Serial port device drivers – Device drivers for IPTD – Interrupt servicing mechanism – Context and the periods for context-switching, dead-line and interrupt latency.

UNIT -IV

Hardware for embedded systems: Various interface standards, Various methods of interfacing, Parallel I/O interface, Blind counting synchronization and Gadget Busy waiting, Parallel port interfacing with switches, keypads and display units.

UNIT - V

Case studies and Applications of embedded systems: Applications to: Communication, Networking, Database, Process Control, Case Studies of: Digital Camera, Network Router.

Text Book

1. Raj Kamal, — Embedded Systems – Architecture, Programming and Design||, TMH, 2007.
2. David E. Simon, .An Embedded Software Primer ", Pearson Education.

3. Muhammad Ali Mazidi and Janice Gillispie Mazidi, .The "8051Microcontroller and Embedded Systems", Pearson Education.

Skill - MICROPROCESSOR AND ALP

UNIT - I

Introduction to microprocessors : Evolution of microprocessors – Single-chip Microcomputer – Embedded Microprocessors – Bit- Slice processors – Microprogramming – RISC and CISC Processors – Scalar and Superscalar Processors – Vector Processors – Array Processors – Symbolic Processors – Digital Signal Processors Intel 8086 – Pin Description of Intel 8086 – Operating modes of 8086 – Register organization of 8086 – BIU and EU – Interrupts – 8086 based computer system – Addressing Modes of 8086.

UNIT - II

8086 Instruction Set – Instruction Groups – Addressing Mode Byte – Segment Register Selection – Segment Override – 8086 Instructions Assembly Language Programs for 8086: Largest Number, Smallest Number in a Data Array – Numbers in Ascending and Descending order – Block Move or Relocation – Block Move using REP instruction – Sum of a series – Multibyte Addition.

UNIT - III

Intel 386 and 486 Microprocessors: Intel 386 and 486 Microprocessor – 486DX Architecture – Register Organization of 486 Microprocessor – Memory Organization – Operating Modes of Intel 486 – Virtual Memory – Memory Management Unit – Gates – Interrupts and Exceptions – Addressing Modes of 80486 – Pin Configuration.

UNIT - IV

Input devices – Output devices – Memory and I/O addressing – 8086 Addressing and Address Decoding – Programmable I/O Ports – DMA Data Transfer. Other Microprocessors – PowerPC Microprocessors – Pentium Microprocessors – Pentium Pro microprocessor – Alpha Microprocessor – Cyrix Microprocessor – MIPS Microprocessor – AMD Microprocessor.

UNIT - V

MOTOROLA 68000, MOTOROLA 68020, MOTOROLA 68030, MOTOROLA 68040 Interfacing of A/D Converter and Applications: Introduction – Interfacing of ADC 0808 or ADC 0809 to Intel 8086 – Bipolar to Unipolar Converter – Sample and Hold Circuit, LF 398 – Microprocessor-based Measurement and Control of Physical Quantities.

TEXT BOOK

1. Badri Ram, — Advanced Microprocessors and Interfacing, Tata McGraw-Hill Publishing Company Limited, Fourteenth reprint, 2007

REFERENCE BOOK

1. A.K. Ray, K.M. Bhurchandi, — Advanced Microprocessors and Peripherals||, Tata McGraw-Hill Publishing Company Limited, Second Edition, 2007

Skill - TCP/IP Protocol

Unit - I

Introduction: Protocols and standards – standards Organizations – internet standards – internet administration -. The OSI model and the TCP/IP protocol suit : the OSI model – layers in the OSI model – TCP/IP protocol suit – addressing – IP versions.

Unit - II

Local area networks – point-to point WANS – SWITCHED WANS – connecting devices – classful addressing – other issues – subnetting and super netting .

Unit - III

IP addresses – classless addressing: Variable length blocks – subnetting – address allocation. Delivery, forwarding and routing of IP packets: Delivery - forwarding – routing – structure of a router.

Unit – IV

Internet Protocol : Datagram – fragmentation – options – checksum – IP package. User datagram protocol : Process-to-process communication – user datagram – checksum – UDP operation . Transmission control protocol : TCP services – TCP feature – segment – A TCP connection – state transition diagram – TCP timers – TCP package.

Unit - V

Domain name systems: Name space – domain Name space – distribution of name space – DNS in the internet – resolution . Remote Login - TELNET: Concept – network virtual terminal (NVT) – NVT character set – embedding – options – option negotiation – controlling the server – out-of-band signaling – mode of operation – user interface – security issue.

TEXT BOOK

- 1.TCP/IP Protocol Suit by Behrouz A. Forouzan Tata McGraw-Hill Third Edn.

REFERECE BOOK

- 1.Computer networks – protocols , standards ,and interfaces by Uyles Black PHI , 2 nd edition.

Skill - MOBILE COMPUTING

UNIT - I

Introduction: Mobility of Bits and Bytes –Wireless The Beginning – Mobile Computing – Dialogue Control – Networks – Middleware and Gateways – Application and services- Developing Mobile computer Applications – security in mobile computing – Standards _ Why is it necessary – Standard bodies. MOBILE COMPUTING ARCHITECTURE: History of computers and Internet – Architecture for mobile computing – Three-tier architecture – Design considerations for mobile computing – Mobile computing through Internet – Making exiting applications mobile enabled.

UNIT - II

MOBILE COMPUTING THROUGH TELEPHONY: Evaluation of telephony – Multiple access procedures – Mobile computing through telephone – IVR Application – Voice XML – API.

UNIT - III

EMERGING TECHNOLOGIES: Blue Tooth – RFID – WiMAX – Mobile IP – IPv6 – Java Card. GSM : Global System for mobile communications – GSM Architecture – GSM Entities – Call routing in GSM – PLMN Interfaces – GSM Addresses and Identifiers – Network Aspects in GSM – GSM Frequency allocations – Authentications and Security. SMS.

UNIT- IV

GPRS – GPRS and packet data network – GPRS network architecture – GPRS network operations – Data services in GPRS – Application for GPRS- Limitations – Billing and Charging. WAP : MMS – GPRS Applications.

UNIT - V

CDMA and 3G: Spread spectrum technology – Is 95 – CDMA vs GSM – Wireless Data – Third generation networks – Applications on 3G WIRELESS LAN: Wireless LAN advantages – IEEE 802.11 standards – Architecture – Mobile in Wireless LAN – Deploying wireless LAN – Mobile adhoc networks and sensor networks – Wireless LAN Security –WiFi vs 3G.

TEXT BOOK

1. MOBILE COMPUTING, Asoke K Talukder , Roopa R Yavagal, TMH, 2005

Skill - DIGITAL IMAGE PROCESSING

UNIT-I

Digital Image Fundamentals Image Transforms- Walsh, Hadamard, Discrete cosine, Hotelling Transforms-Image Formation. File Formats.

UNIT-II

Image Enhancement Histogram Modification Techniques-Image Smoothing-Image Sharpening-Image Restoration-Degradation Model-Diagonalization of Circulant and Black circulant matrices-algebraic approach to restoration.

UNIT-III

Image Compression and Segmentation Compression Models-Elements of Information Theory-Error free Compression-Image Segmentation- Detection of Discontinuities-Edge Linking and boundary detection-Thresholding-Regions Oriented Segmentations-Morphology.

UNIT-IV

Feature Extraction Image feature descriptions-Interpretations of Line drawings, Image pattern recognition algorithms.

UNIT-V

Knowledge Representation and Use Knowledge Representation and Use-Image analysis using Knowledge about scenes-Image Understanding using two dimensional methods.

TEXT BOOK:

1. Gonzalez.R.C & Woods. R.E., —Digital Image Processing||, 2nd Edition, Pearson Education, 2002. (Chapters: 1, 2, 3, 4, 5, 8, 9, 10, 11 and 12).
2. Anil Jain.K, —Fundamentals of Digital image processing||, Prentice Hall of India, 1989. (Chapters: 5, 7, 8 and 11).

REFERENCE BOOKS:

1. Sid Ahmed, —Image Processing||, McGraw Hill, New York, 1995.
2. Milan Sonka, Vaclav Hlavac and Roger Boyle, —Image processing Analysis and Machine vision||, Second Edition, Thomson Brooks/Cole, 1999.

Skill - Middleware Technologies

Unit - I

Client-Server architecture: 2-tier model – 3-tier model – n-tier model – J2EE architecture – DOTNET architecture – MVC architecture.

Unit - II

Présentation services: Servlets – JSP – Interaction services: RMI – CORBA – XML – JAXP - JMS – Data Management services: JDBC.

Unit - III

Component model: EJB : Session Beans : Stateless and Stateful – Entity Beans – CMP and BMP - Message Driven Beans.

Unit - IV

ASP.NET : Introduction – architecture – ASP.NET Runtime – Internet Information Services – Visual Web Developer Web Server – ASP.NET Parser – Assembly – Page class. Web Server Controls – HTML Controls – AdRotator and Calendar controls – Validation Controls – Security Management.

Unit - V

ASP.NET and ADO.NET: System.Data, SqlClient and Xml namespaces – Provider objects and Consumer objects – Disconnected data access – GridView FormView. Web Services: Provider – WSDL – UDDI – SOAP – HTTP – Developing simple web services – Connecting a Web Service to a data source – Developing ASP.NET Clients for Web Services.

TEXT BOOK

1. Justin Couch and Daniel H Steinberg, "J2EE bible", Willey India Pvt. Ltd, New Delhi, 2002.
2. Paul Tremblett, "Instant Enterprise Java Beans", TMH Publishing company, New Delhi, 2001

SKILL - WAP AND XML

Goal:

Knowledge on various Web technologies like ASP, JVM, DCOM, XML and WAP.

Objective:

To inculcate knowledge web technological concepts and functioning internet. It is to enable generic SGML to be served, received, and processed on the Web in the way that is now possible with HTML.

UNIT - I

The Rise of Mobile Data: Market Convergence Enabling Convergence – Key Services for the Mobile Internet. Overview of the Wireless Application Protocol: The Origins of WAP – Overview of the WAP Architecture – Components of the WAP Standard – Network Infrastructure Services Supporting WAP Clients – WAP Architecture Design Principles – Relationship to Other Standards.

UNIT -II

The Wireless Markup Language: Overview – The WML Document Model – WML Authoring – URLs Identify Content – Markup Basics – WML – Basics – Basic Content – Events, Tashs and Bindings.

UNIT - III

Variables – Other Content you can Include – Controls – Miscellaneous Markup – Sending Information – Application Security – Other Data: The Meta Element – Document Type Declarations – Errors and Browser Limitations – Content Generation – WML Version Negotiation.

UNIT - IV

User Interface Design: Making Wireless Applications, Easy to Use: Web Site Design: Computer Terminals Vs Mobile Terminals – Designing a Usable WAP Site – Structured Usability Methods – User Interface Design Guidelines – Design Guidelines for Selected WML Elements.

UNIT -V

Wireless Telephony Applications: Overview of the WTA Architecture – WTA Client Framework – WTA Server & Security – Design Considerations – Application Creation Toolbox – Future WTA Enhancements. The Mobile Internet Future: Better Content, Easier Access – Beyond Browsing – Beyond Cellular – Mobile Data Unleashed.

TEXT BOOKS

1. Sandeep Singhal, Thomas Bridgman, Lalitha Suryanarayana, Daniel Mauney, Jari Alvinen, David Bevis, Jim Chan, Stefan Hild

Skill -XML LAB

1. Create a demo for XSLT.
2. Create a menu in XML.
3. Write an XML document to display your bio-data
4. Display XML information in Tree structure format.
5. Write a XML program to navigate the records in the file.
6. Write a program to save data to an XML file.
7. Write a program to show the function of CDATA.
8. Write a XML program to maintain the student database.
9. Write a program to generate XML file from the Database.
10. Write a XML program to implement the Internal DTD and External DTD. ASP
11. Write a program to load a text file into a div element with XML HTTP.
12. List data from an XML file with XML HTTP.

Project Report / Mini Project

Guidelines for project work

1. The aim of the Project work is to acquire practical knowledge on the implementation of the programming concepts studied.
2. Each student should carry out individually one Project Work and it may be a work Using the software packages that they have learned or the implementation of Concepts from the papers studied or implementation of any innovative idea.
3. The Project work should be compulsorily done in the Industry only under the supervision of the Department staff concerned.
4. The work has to be done in five reviews during VI Semester.
5. External Exam will be conducted as follows. End Semester Viva
 - ❖ An End- semester Internal Viva-voce will be conducted at the end of IV/ VI semester for 50/100 marks.
 - ❖ Both the Internal (Respective Guides) and External Examiners (25+25)/(100+100) Should Conduct the Viva-Voce Examination at the last day of the practical session.
 - ❖ Along with the mark sheet an Annexure report containing the candidate's Register no and Title of the Project work should be sent to the Controller of Examinations by the Examiners and a copy of the same has to be retained in the Department.
 - ❖ No candidate will be allowed to change the title of the Project work after the completion of End- semester Viva.
 - ❖ For absentees on genuine grounds a common submit End-Semester Viva-voce may be conducted at the COE office for All degree by obtaining prior permission from the COE on the recommendations from the HODs of respective Department before the commencement of the next semester.