J.J COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS)
Sivapuram, Pudukkottai.
(Re-Accredited by NAAC with "A"Grade in Third Cycle)
MASTER OF **C**OMPUTER **A**PPLICATIONS
(For the candidates admitted from the Academic Year 2016 -17 Onwards)

COURSE STRUCTURE

Semester	Course Code	Course Title	Ins. Hrs/ Week	Credit	Exam Hrs	Marks		Total
						Int.	Ext	
I	P1RCACC1	Digital Computer Fundamentals	5	4	3	25	75	100
	P1RCACC2	Data Structures and Algorithms	5	4	3	25	75	100
	P1RCACC3	Database Management System	4	4	3	25	75	100
	P1RCACC4	Shell Programming using Unix	5	4	3	25	75	100
	P1RCACC5	OOAD and UML	5	4	3	25	75	100
	P1RCACC6P	Shell Programming using Unix - Practical	3	2	3	40	60	100
	P1RCACC7P	DBMS - Practical	3	2	3	40	60	100
		Total	**30**	**24**	**-**	**-**	**-**	**700**
II	P2RCACC8	Distributed Operating system	5	4	3	25	75	100
	P2RCACC9	Programming in JAVA	5	4	3	25	75	100
	P2RCACC10	Web Programming using HTML and XML	4	4	3	25	75	100
	P2RCACC11	Data Communication Networks	5	4	3	25	75	100
	P2RCAEC1	Artificial Intelligence and Expert System	5	4	3	25	75	100
	P2RCACC12P	Programming in JAVA - Practical	3	2	3	40	60	100
	P2RCACC13P	Web programming using HTML and XML - Practical	3	2	3	40	60	100
		Total	**30**	**24**	**-**	**-**	**-**	**700**
III	P3RCACC14	DataMining and Ware Housing	5	4	3	25	75	100
	P3RCACC15	J2EE Technologies	5	4	3	25	75	100
	P3RCACC16	Organizational Behaviour	5	4	3	25	75	100
	P3RCACC17	Discrete Mathematics	5	4	3	25	75	100
	P3RCACC18P	J2EE Technologies - Practical	3	2	3	40	60	100
	P3RCACC19P	Photoshop and flash - Practical	3	2	3	40	60	100
	P3RCAEC2	Software Engineering	4	4	3	25	75	100
	P3RCAPS1	**System Assembling and Trouble shooting**	-	2	-	-	-	100
		Total	**30**	**26**	**-**	**-**	**-**	**800**

IV	P4RCACC20	Mobile Communication	4	4	3	25	75	100
	P4RCACC21	DOT NET Technologies	4	4	3	25	75	100
	P4RCACC22	Accounting and Financial Management	5	4	3	25	75	100
	P4RCACC23	Probability and Statistics	5	4	3	25	75	100
	P4RCACC24P	Mobile computing - Practical	3	2	3	40	60	100
	P4RCACC25P	DOT NET Technologies - Practical	3	2	3	40	60	100
	P4RCAEC3	Software Project Management	4	4	3	25	75	100
	P4RCAPS2	Soft skill Development Course	2	2	3	25	75	100
		Total	**30**	**26**	**-**	**-**	**-**	**800**
V	P5RCACC26	Compiler Design	4	4	3	25	75	100
	P5RCACC27	Network Security	4	4	3	25	75	100
	P5RCACC28	PHP and MYSQL	4	4	3	25	75	100
	P5RCACC29	Marketing Management	4	4	3	25	75	100
	P5RCACC30	Optimization Techniques	4	4	3	25	75	100
	P5RCACC31P	Network Security - Practical	3	2	3	40	60	100
	P5RCACC32P	PHP and MYSQL - Practical	3	2	3	40	60	100
	P5RCAEC4	Software Quality Assurance and Testing	4	4	3	25	75	100
		Total	**30**	**28**	**-**	**-**	**-**	**800**
VI	P6RCACC33PW	Project Work	-	**12**	-	-	-	**100**
		Grand Total	**150**	**140**	**-**	**-**	**-**	**3900**

DIGITAL COMPUTER FUNDAMENTALS

OBJECTIVE:

1. To understand the basics of digital computer fundamentals.
2. To understand the concept of gates.
3. To gain the knowledge about flip flops.
4. To get the knowledge about memory unit and registers.
5. To understand the concept of micro programs and accumulators.

Unit I: Binary Systems

Digital Systems-Binary numbers-Number base conversions-Octal and Hexadecimal numbers-Complements-Single Binary numbers-binary codes-Binary Storage and Registers-Binary Logic.

Unit II: Boolean Algebra and Logic Gates

Boolean algebra and Logic Gates: Basic definition axiomatic definitions of Boolean algebra-basic theorems and properties of Boolean Algebra-Boolean functions-canonical and standard forms-other logic operations-digital logic gates-integrated circuits

Unit III: Gate-Level Minimization

The Map method-four variable map-five variable map-product of sum(pos)-Simplification-don't care conditions- NAND and NOR implementation – other two level implementations – Exclusive OR function

Unit IV: Combinational Logic Circuit and synchronous sequential logic

Conditional circuits – analysis procedure – design procedure – binary added – subtractor – decimal adder – binary multiplier – magnitude comparator – decoder – encoder-multiplexers

Sequential circuits- latches flip flop.

Unit V: Registers and Counters

Registers-shift registers –ripple counters- synchronous counters –other counters. Memory and Programmable logic: Introduction – Random Access Memory – memory decoding –error detection and correction – read only memory –programmable logic array .

TEXT BOOK :

1. "Digital Design"-M. Morris Mano, Pearson Education

Unit I - Chapter 1 Unit II - Chapter 2 Unit III - Chapter 3 Unit -IV - Chapter 4,5 Unit V - Chapter 6,7

REFERENCE BOOK :

1."Digital computer fundamentals" Thomas Bartee C,TMH , 3rd edition

DATA STRUCTURES AND ALGORITHMS

OBJECTIVE:

1. To understand the basics of data structures and C++.
2. To understand the concepts of tress.
3. To understand the concept of sorting.
4. To understand the concept of searching.
5. To understand the concept of graphs and their applications.

Unit I

Introduction to data Structures: Records, Arrays, Stacks, Queues, Recursion Linked list, Binary tree and Traversing.

Unit II

Sorting and Searching Techniques: Introduction Internal and External Sorting , Insertion, Selection, Merging, Radix, quick Sort, Heap Sort and Bubble Sort. **Searching:** Introduction, Sequential Search, Binary Search, Binary tree search.

Unit III

Graphs and Their Applications : Introduction ,Graph Theory ,Terminology, Representation of Graphs, Tree & Binary Tree ,Operation on graphs ,Shortest path Algorithms, Topological Sorting.

Unit IV

Algorithms : Development of Algorithms ,Basic Concepts ,Structured Program Concepts , Top down Development of Algorithms, Principle of analyzing Algorithms ,Algorithms design methods ,Sub goals ,Hill Climbing.

Unit V

Algorithms Design Techniques : Divide and Conquer Algorithms, Dynamic Programming, Greedy Algorithms, Backtracking and Branch & Bound.

TEXT BOOKS:

1. Eills Horowitz & S. Sahni, Fundamentals of Data Structure ,Galgotia Pub.

   Unit-I: Chapter -1,2,3,4,5; Unit-II: Chapter -4,5,6,7; Unit-III: Chapter – 5,6

2. Eills Horowitz & S. Sahni, Fundamentals of Computer Algorithms, Galgotia Pub.

   Unit-IV: Chapter -1,2,3; Unit-V: Chapter -4,5,6;

REFERENCE BOOKS:

1. Data Structure Using C – Langsam, Augenstian, Tenenbaum, PHI
2. Data Structure and Algoriithms, V.Aho, Hopcropft ,Ullaman.LPE
3. Introduction to design and analysis of algorithms – S.E Goodman,ST.

DATABASE MANAGEMENT SYSTEM

OBJECTIVE:

1. To understand the basics of database management system.
2. To understand the concept of relationship model.
3. To get the knowledge about relational model.
4. To understand the concept of structured query language.
5. To gain the knowledge about PL/SQL.

Unit I : Introduction to Database Management Systems

INTRODUCTION: Database Management System –Database System Applications-Database System versus File System-View of Data-Database Languages-Users and Administrators-Database System Structure-Application Architectures.

Unit II : Entity Relationship Model

Basic concepts: Entity Sets – Relationship Sets-Constraints-Keys-Entity Relationship Diagram-Weak Entity Sets-Extended E-R Features: Specialization-Generalization-Attribute Inheritance-Constraints-Aggregation

Unit III : RELATIONAL MODEL

RELATIONAL MODEL: Basic Structure – Relational Algebra: Fundamental Operations–Outer Join. Functional Dependencies : Basic Concepts-Closure-Closure ofAttributeSets-Decomposition-FirstNormalForm-SecondNormalForm-SecondNormal Form-Third Normal Form-Boyce-Code Normal Form.

Unit IV : Structured Query Language

Basic Queries in Sql - Aggregate Functions – Joins – Set Operations – Sub Queries - DML Commands-DDL Commands-Tables-Views.

Unit V : PL/SQL

INTRODUCTION OF PL/SQL: Advantages of PL/SQL – The Generic PL/ SQL Block – PL/SQL : Data types – Variables – Constants – Control Structures – Cursors – Exception Handling –Procedures and Functions - Packages – Triggers – Types of triggers.

TEXT BOOKS:

1. H. F. Korth & A. Silverschatz, Database Concepts, Tata McGraw Hill, New Delhi. 5th Edition
   (Unit I Chapter : 1, Unit II Chapter-6, Unit III Chapter-2,7).
2. Ivan Bayross, SQL,PL/SQL, The programming language of Oracle.
   (Unit IV section III part-1,2,3, Unit V section V-part-15,16).

REFERENCE BOOKS:

1.Elmasri & Navathe, Fundamentals of Database systems, Addison & Weisely.

2. C. J. Date, Database Systems, Prentice Hall of India, New Delhi.

SHELL POROGRAMMING USING UNIX

OBJECTIVE:

1. To understand the basics of UNIX.
2. To get the knowledge using the shell.
3. To understand the concept of shell programming.
4. To gain the knowledge about features of UNIX.
5. To understand the concept of program development and documentation.

UNIT-I INTRODUCTION TO UNIX

Files and common commands – More about files: directories – The shell – The rest of the UNIX system – Directories and filenames – Permissions – Inodes – The directory hierarchy – Devices

UNIT-II USING THE SHELL

Command line structure – Meta characters – Creating new commands – Commands arguments and parameters – Program output as arguments – Shell variables – More on I/O redirection – Looping in shell programming – Bundle: Putting it all together . Filters –The grep family – Other filters – The stream editor sed – The awk pattern scanning and processing language – Good files and good filters.

UNIT-III SHELL PROGRAMMING

Customizing the cal command – While and Until loops : Watching for things – Traps : Catching interrupts – Replacing a file : Overwrite – Zap : Killing processes by name – The Pick command : blanks vs arguments – The news command : Community service messages – Get and put : Cracking the changes .

UNIT-IV : FEATURES IN UNIX

Standard input and output : Vis – Program arguments : Vis version 2 – File access : Vis version 3 – A screen at a timer printer : P – An example : Pick – On bugs and debugging – An example : Zap – An interactive file comparison program : idiff – Accessing the environment . Unix System Calls : Low-level I/O – File system : Directories – File system : Inodes – Processes – Signals and interrupts.

UNIT-V : PROGRAM DEVELOPMENT AND DOCUMENTATION

Stage 1: A four-function calculator – Stage 2 : Variables and error recovery – Stage 3: Arbitrary variable names ; built-in functions - Stage 4 : Compilation into a machine – Stage 5: Control flow and relational operators – Stage 6: Functions and procedures; input/output – Performance evaluation. Document Preparation : The ms macro package – The troff level – The tbl and eqn preprocessors – The manual page – Other document preparation tools.

TEXT BOOK:

1. The " UNIX PROGRAMMING ENVIRONMENT " – Brian W.Kernighan , Robe Pike .

Unit I – (Chapters 1,2) , Unit II – (Chapters 3,4) , Unit III – (Chapters 5) , Unit IV – (Chapters 6,7) Unit V – (Chapters 8,9) .

REFERENCE BOOKS :

1."UNIX SYSTEM FOR MS DOS USER" – Stephen Earhart.

2."ADVANCE UNIX A PROGRAMMING GUIDE" – Stephen Prata

OOAD AND UML

OBJECTIVE:

1. To understand the basics of OOAD and UML.
2. To understand the concept of various object oriented methodologies.
3. To understand the concept of object oriented analysis.
4. To understand the concept of object oriented design.
5. To understand the concept of UML.

Unit-1

Structured approach to system constructions: SSADM/SADT-An overview of object oriented systems development & Lifecycle

Unit-II

Various object oriented methodologies-Introduction to UML

Unit-III

Object oriented analysis – Use cases- Object classification, relationships, attributes, methods

Unit-IV

Object oriented design –Design axioms – Designing classes – layering the software design :-data access layer, User interface layer, Control/business logic layer

Unit-V

UML – Examples on : Behavioral models – Structural models – Architectural models from real world problems.

TEXT BOOK:

1. Bahrami Ali, object oriented system development, Irwin McGrawHill, 2005(First 4 units covered here).

(UNIT I: Chapter-1,2,3 UNIT II:Chapter-4,5 UNIT III:Chapter-6,7,8

UNIT IV: Chapter-9,10,11)

2.Booch Grady, Rambaugh james, Jacobson Ivar, the unified modeling language – User Guide,Person education,2006(ISBN 81-7758-372-7) **(UNIT -V)**

REFERENCE BOOK:

1.Martin Fowler, kendall Scott, "UML Distilled –Applying the standard Object Modeling Languages", Addition Wesley 1977

SHELL PROGRAMMING USING UNIX PRACTICAL

1.Write a shell program to some of the series

1/1! + 1/2! + 1/3!+…….+1/10!.

2.Write a shell program which accepts the name of the file from, the standard input and then performs the following tests on it.

i. File existence
ii. File readable
iii. File writable
iv. Both readable and writable.

3.Write a shell program using three argument to take the pattern as well as input and output file name , if the pattern is found display " pattern found " else display " error message " , also check right number of arguments are entered

4.Write a shell program which periodically monitors the disk for the existence of a file and then executes the program once file has been located [using UNTIL statement].

5.Write a shell program which accepts the name of a file from the standard input and then perform the following test on it.

i. Enter the five names in a file
ii. Sort the name in existing file
iii. List unsorted and sorted file
iv. Quit.

6.Write a menu driven shell program to copy, edit , rename , delete a file .

7.Write a menu driven shell program to perform the following task'

i. Enter the sentence in file
ii. Search a given whole word in an existing file
iii. Quit

8.An hospital wants to maintain the patient detail by computing technique, write shell program to get list of ?

i. Patients in a blood group.
ii. Patient in a age between 20 to 30.

9.Write a shell program to prepare electric bill for domestic consumers.

10.Write a menu driven shell program for the following

i. List of files,
ii. Process of users,
iii. Today's date ,
iv. Users of system ,
v. Quit to UNIX.

11.Write a shell program to reverse the sentence and fine the given sentence is palindrome or not?.

12.Create a equivalent of a four-function calculator using UNIX.

DBMS PRACTICAL

1. Creating & Updating and Inserting into database & simple queries.
2. Use of Select statement – for queries.
    i. AND, OR, NOT Operators, WHERE clause.
    ii. UNION, INTERSECTION, MINUS
    iii. Sorting and Grouping.
3. Nested queries using SQL.
    i. Sub queries
    ii. Join
4. Built-in-Functions of SQL
5. Use of Indexes creating views and querying in views.
6. Cursors' triggers and stored procedures and functions.
7. Case Studies :

a) Student evaluation systems.
    i. Payroll system.
    ii. Income tax calculations.
    iii. Seat reservation problems.
    iv. Mark-Sheet preparation.

DISTRIBUTED OPERATING SYSTEM

OBJECTIVES

1. To understand the basics of DOS
2. To understand the concept of communication in distributed system
3. To understand the concept of synchronization in distributed system
4. To get knowledge about processors and processes in distributed system
5. To gain the knowledge about distributed file system.

Unit-I Introduction to DOS

What is Distributed System – Goals – Advantages and Disadvantages of DOS – Hardware concepts – Multi computers – Software concept – Network Operating System – Multi - Purpose Time Sharing System – Design Issues – Characteristics.

Unit-II Communication in Distributed System

Communication in Distributed Systems: Layered Protocols – Asynchronous Transfer Mode (ATM) Networks – ATM Switching – Client/Server Model – Addressing – Group Communications.

Unit-III Synchronization in Distributed System

Clock Synchronization – Mutual Exclusion – Election Algorithm – Bully Algorithm – Ring Algorithm – Atomic Transactions : Transaction Model – Implementation – Concurrency – Control – Dead Lock In Distributed Systems : Detection and Prevention.

Unit-IV Processes and Processors in Distributed System

Threads – Introduction – Thread usage – Design issues for thread packages – Implementing a Thread Packages – System Models : The Workstation Model – Using Idle Workstation – The Processor Pool Model – Hybrid Model – Processor Allocation – Fault Tolerance.

Unit-V Distributed File System

Distributed File System Design : The File Service Interface – Directory Server Interface – Semantics of File Sharing – Distributed File System Implementation – Trends – New Hardware – Scalability – WAN – Mobile Users – Distributed Shared Memory – Introduction – What is Shared Memory.

TEXT BOOK:

1."Distributed Operating System" by Andrew S.Tanenbaum, Pearson Education

Unit-I Chapter 1 , Unit-II Chapters 2.1,2.2,2.3,2.5 , Unit-III Chapter 3 ,Unit-IV Chapter 4 , Unit-V Chapters 5.1,5.2,6.2,6.3,6.4

REFERENCE BOOK :"Distributed Operating System Concept and Design" , Pradeep.K & Singh

PROGRAMMING IN JAVA

OBJECTIVES

1. To understand the basics of Java.
2. To get the knowledge about class, objects, methods, exceptions and string.
3. To understand the concepts of inheritance and packages.
4. To get knowledge about multithreading, I/O and networking.
5. To gain the knowledge about applet, events and AWT components.

Unit I : An overview and Basic of Java

Creation of Java - Java and Internet -Java Buzzwords - OOPS - Simple Program - Lexical Issues - Data Types - Literals - Variables - Type Conversation and Casting - Arrays - operators Control Statements :Selection statements - Iteration Statements - Jump Statements

Unit II : Class, Objects ,Methods, Exception &String

Introducing Classes - Class Fundamentals - Declaring Objects - Introducing Methods - Constructors - This keyword - Garbage Collection- Finalize() Method- Exception Handling - Java's Built - in Exceptions - creating Own Exception-String Handling-Special String operations-Modifying String .

Unit III : Inheritance and Packages

Inheritance Basics - Super Keyword - Multilevel Hierarchy- Constructors are called- Overriding - Abstract Classes and Methods - Final Keyword - Overloading - Parameters - Passing Arguments - Returning Object - Recursion - Access Control - Static – Nested and Inner Classes - String Class - Command Line Argument - Interfaces - Packages - Access Protection

Unit IV : Multithreading ,I/O and Networking

Java Thread - Creating a Thread - Creating Multi Threads - I/O Basics - Reading and Writing Console I/O - Reading and Writing Files - Stream Classes - Byte Streams - Character Streams - Stream I/O –Networking classes and interfaces.

Unit V : Applets , Events and AWT Components

Applet Class - Applet Basics - Applet skeleton - Applet Methods - Applet Tags - Parameters to Applet-Event Handling - Event Classes - Event Listener Interface –Working with Graphics- AWT Controls , Layout Manager &, Menus : Control Fundamentals - Labels - Buttons - Check Boxes - Checkbox Group - Choice - List - Scroll Bars -Text Field - Text Area - Layout Managers - Menu Bars and Menus - Dialog Boxes - File Dialog .

TEXT BOOK:

1."The Complete Reference Java2" - Herbert Schildt Fifth Edition

(Unit I:Chapters 1,2,3,4,5 Unit-II: Chapters ,6,10,13 Unit-III: Chapters 7,8,9 Unit-IV: Chapters 11,12,17,18 Unit-V: Chapters 19,20,21,22)

REFERENCE BOOK:

1."Programming with java" - C.Muthu.

WEB PROGRAMMING USING HTML AND XML

OBJECTIVE:

1. To understand the basics of web programming using HTML and XML.
2. To understand the concept of the web medium.
3. To gain the knowledge about site types and architectures.
4. To get the knowledge about pages and layout.
5. To understand the concept of GUI and images.

Unit I :

Defining Web Design – The Web Design Pyramid – The Medium of the Web – Types of Web Sites – A Clearer Definition of Web Design - Web Design Themes – **User-Centered Design** – Usability – Web Users –Common User Characteristics-The user world – General types of users-Web Conventions – Building a usable website

Unit II :

The Web Medium – Core Web Technologies – Web Browsers – Markup Languages – Style Sheet Technologies – Images – Video – Programming Technologies – Client-side Programming – Server-side Technologies – Networks and Related Protocols – **The Web Design Process** – The Need for Process – Ad Hoc Web Process – Basic Web Process Model – Approaching a Web Site Project – The Site Plan – Design Phase Dissected – Testing

Unit III :

Site Types and Architectures – Site Types – Grouping by Purpose – Site Structure – Site Organization Models – **Navigation Theory** – Navigation - Placing Navigation– Consistency of Navigation – Navigation and Scrolling – Navigation and Mouse Travel – Frames – Sub-windows

Unit IV :

Pages and Layout – Page sizes – Page Margins – Page Types – Entrance Pages – Exit Pages – Web Design Schools – **Text** – Fonts – Setting Fonts in Web Pages – Text Layout – Setting Type Hierarchy – Formatting Tables – **Color** – Color Basics – Computer Color – Web Color Basics – Practical Web Color – Brower-safe Color

Unit V :

Images – Image Formats – HTML and Images – Images and CSS – Image Usage - **GUI Widgets and Forms** – Full-Screen Windows – Sub-Windows – Forms – Password Fields – Pull-Down Menus – Scrolled Lists – Push Buttons – Usable Forms – Form Validation

TEXT BOOK :

1.“ The complete reference web design” 2nd edition by Thomas Powell Tata McGraw Hill Education Private Limited

Unit I- Chapter 1,2 Unit –II Chapter 3,4 Unit-III Chapter 6,7 Unit-IV Chapter 11,12,13 Unit- V Chapter 14, 15

REFERENCE BOOK:

1. “The complete reference HTML and CSS “5th edition by Powell
2. “Programming in World wide web” 4th edition by Sebesta pearson publication

DATA COMMUNICATION NETWORKS

OBJECTIVE:

1. To understand the basics of data and communication networks.
2. To understand the concept of OSI model.
3. To understand the concept of transmission media.
4. To get the knowledge about switching techniques.
5. To gain the knowledge about routing algorithms.

Unit I : INTRODUCTION

Networks – Protocols and Standard – Line Configuration – Topology – Transmission Mode – Categories of Networks – Inter Networks.

Unit II : OSI MODEL

Functions of the layers – TCP/IP Protocol Suite – Signals – Analog and Digital Signal – Periodic and A-periodic Signals – Analog Signals – Digital Signal – Data Transmission – Data Terminal Equipment – Data Circuit terminals Equipment – Modems.

Unit III : TRANSMISSION MEDIA

Guided media – Unguided Media – Transmission impairments – Media Comparison. Multiplexing – FDM – TDM – WDM. Error Detection and correction – Types of Errors– Detection – Vertical Redundancy Check (VRC) – Longitudinal Redundancy Check (LRC) – Cyclic Redundancy Check (CRC) – Checksum – Error Correction.

Unit IV : SWITCHING TECHNIQUES

Circuit switching – Packet Switching – Message Switching – Networking and Internetworking Devices – Repeaters – Bridges – Routers – Gateways.

Unit V : ROUTING ALGORITHMS

Distance Vector Routing – Link State Routing – Data Link Control – Line Discipline – Flow Control – Error Control.

TEXT BOOKS:

1. William Stallings, "Data & Computer Communications", Sixth Edition, Pearson Education, 2001. **Unit I – (Chapters 1,2) , Unit II – (Chapters 3,4 ,5) , Unit III – (Chapters 6,7,8) , Unit IV – (Chapters 10,11,12,12,13) Unit V – (Chapters 18,19,20) .**

REFERENCE BOOKS:

1.Fred Halsall, "Data Communications, Computer Networks and Open Systems", Addison Wesley, 1995.

PROGRAMMING IN JAVA PRACTICAL

1. Write A Java Program To Perform Arithmetic Operations In Switch Case

2. Preparing A Student Mark List Using Class And Objects

3. Write A Java Program To Display Matrix Using Array Concept

4. Write A Java Program To Implement The Concept Of Packages And Interface

5. Write A Java Program To Draw The Rectangle Using Polymorphism And Inheritance

6. Create A Try Block That Is Likely To Generate Two Types Of Exception And Incorporate Necessary Catch Blocks

7. Create A Java Program Using Multi-Threading Concept

8. Write A Program To Passing Parameter Using Applet

9. Write A Applet Program To Change The Background Color With The Help Of Three Button Named Red, Green ,Blue

10. Draw The Rectangle, Oval And Circle Shapes Using Graphics Class

WEB PROGRAMMING USING HTML AND XML PRACTICAL

1. Create a HTML webpage to display Images, to move text, create a Table using corresponding Tag.

2. Create a HTML table with rows & columns and split them using Rowspan and Colspan.

3. Create a web page in the format of front page of a news paper using Text links. Align the text with colors.

4. Write an XML document to display your Bio-data. Write an XSL style sheet and attach that to the XML document. Validate the document using DTD or XSD.

5. Write a HTML program to prepare Employee pay bill.

6. Write a HTML program to prepare Student performance evaluation document.

7. Write a HTML program using FRAME and FRAMESET to create College Website.

8. Create a Website for Purchase Furniture like TV, Washing Machine, Fan and Fridge.

9. Write a HTML webpage to change the Background Color Using <Option> Tag.

DATAMINING AND WAREHOUSING

OBJECTIVE:

1. To understand the basics of data mining and warehousing.
2. To understand the concept of cluster analysis.
3. To gain the knowledge about web data mining and search engines.
4. To get the knowledge about data warehousing.
5. To understand the concept of online analytical processing and information privacy.

UNIT-I: Association Rules Mining

Introduction to Data mining – Association Rule Mining – The Apriori Algorithm – Improving the efficiency of Apriori algorithm – Apriori-Tid – Direct Hashing and Pruning(DHP) – Dynamic Itemset Counting (DIC) – Performance Evaluation of algorithms – Software for Association Rule Mining.

UNIT-II: Cluster Analysis

Classification – cluster analysis – Desired features of Cluster analysis – Types of Data- Computing Distance – Types of cluster analysis methods – Partitional methods – Hierarchical methods – Density based methods – Dealing with large database – Quality and validity of cluster analysis methods – Cluster analysis software.

UNIT-III: Web Data Mining and search Engines

Web data mining – Web terminology and characteristics – Locality and hierarchy in the web –Web content mining – Web usage mining – Web structure mining – Search Engines – Characteristics of Search Engines – Search Engine Functionality – Search Engine architecture – Ranking of Web pages – The search engine industry – Enterprise search engine software.

UNIT-IV: Data Warehousing

Data warehousing – Introduction – Operational Data stores – ETL – Data warehouses – Data warehouse design – Guidelines for data warehouse implementation – Data warehouse – Metadata – Algorithms & Operations to create data warehouse – designing data warehouse – Application of Data warehouse.

UNIT-V: Online analytical processing and Information Privacy

Online analytical processing – OLAP – Characteristics of OLAP systems – Motivation for using OLAP – Multidimensional View and /data Cube – Data cube Implementations – Information privacy – What is Information privacy? – Basic principles of Protect Information

privacy – Uses and Misuses of Data Mining – Primary Aims of Data Mining Pitfalls of Data Mining – Technological Solutions.

TEXT BOOK :

1. G.K.Gupta, Introduction to Data Mining with case studies, Prentice Hall India, 2006 (ISBN 81-203-3053-6)

   Unit I : (Chapters 1,2); Unit II : (Chapters 3,4); Unit III : (Chapters 5,6); Unit IV : (Chapters 7); Unit V : (Chapters 8,9)

REFERENCE BOOKS:

1.”Data Mining Methods” by Rajan Chattamvelli – Narosa Publishing House

J2EE TECHNOLOGIES

OBJECTIVE:

1. To understand the basics of J2EE.
2. To understand the concept of presentation tier.
3. To understand the concept of the enterprise information system tier.
4. To gain the knowledge about service tier.
5. To gain the knowledge about data tier.

Unit I:

Introduction: Understanding java and the J2EE platform-understanding J2SE-Examining the Origin of (J2EE)- Working with the model-view-controller-Understanding J2EE API's-Introducing Application Servers-Implementing the J2EE Platform-Understanding the features of an Application server-Examining full J2EE Implementations-Examining partial J2EE Implementations-Avoiding vendor lock-In-Understanding remote method invocation-providing an Overview of RMI-Developing applications with RMI-Pushing data from the RMI server-RMI over Inter –ORB protocol(IIOP).

Unit II:

The Presentation Tier: Creating a magazine publisher application using servlets-using the servlet context-performing URL redirection-Examining the web.XmL deployment descriptor-Going over JSP basics-Introducing JSP-Examining MVC and JSP-JSP scripting elements and directives-working with variable scopes-error pages-using java beans.

Unit III:

The Enterprise Information System Tier: Working with java mail-exploring the "Hello world" of java mail-understanding the protocols for javamail-javamail components-using the java mail API-integrating java mail into J2EE-Understanding the java messaging service-Explaining messaging-Introducing JMS-examining messaging models-understanding the major JMS components-configuring JMS.

Unit IV:

The Service Tier: Understanding EJB architecture and design-Explaining the EJB component model-Reviewing roles, relationship and responsibilities-the enterprise JavaBeans-understanding EJB container functionality-integrating with CORBA-performance and scalability issues.

Unit V:

The Data tier: Introducing JDBC driver types-creating your first JDBC program-performing batch updates-using save points-configuring the JDBC-ODBC bridge-explaining

database connection pools and data sources-revisiting-DBProcessor-using the row set interface-understanding the J2EEconnector architecture-examining the contracts-the common client interface (CCI)-packaging and deployment.

TEXT BOOK:

1. J2EE bible 1.4-McGovern et al.

Unit I: Chapter: 1, 3, 4 Unit II: Chapter: 5, 6 Unit III: Chapter: 8,9

Unit IIV: Chapter: 14 Unit V: Chapter: 18, 19.

REFERENCE BOOKS:

1. J2EE Architecture- C.V. Kumar.
2. Practical J2EE Application – Nadiv Gulzar.

J2EE TECHNOLOGIES PRACTICAL

1. To find the marks of the students using Remote Method Invocations.

2. To write a Servlet program to calculate the bonus of an employee

3. To write a Servlet program to implement Session Tracking.

4. To write a Servlet program to check authentication for user using Cookies.

5. To write a Servlet program and use JDBC in it.

6. To write a simple program for JSP.

7. To write a JSP program that works with JDBC.

8. To write a JSP Program with Bean Class.

9. To write a EJB Stateless Program to create bonus of an employee.

PHOTOSHOP AND FLASH PRACTICAL

Photoshop

1. Develop an image using selection tools.
2. Develop an image using effects and apply filters and layers.
3. Develop an image with the help of clone stamp tool, smudge tool.
4. Create an e-invitation for college day.
5. Designing a student id card.
6. Designing multi-media profile about your university technology park.
7. Designing a cover page for the book in your subject area.
8. Designing a web banner.

Flash

9. Animate an image using motion, shape tweening, and actions.
10. Create an animation to represent the growing moon.
11. Create an animation to indicate a ball bouncing on steps.
12. Simulate movement of a cloud.
13. Animate a comic character.
14. Draw the fan blades and to give proper animation.
15. Create an animated cursor.

MOBILE COMMUNICATION

OBJECTIVE:

1. To understand the basics of mobile communication.
2. To understand the concept of telecommunication system.
3. To get the knowledge about wireless LAN.
4. To gain the knowledge about mobile network layer.
5. To understand the concept of wireless application protocol.

Unit I- Wireless Transmission

Introduction : Application – A short history of wireless communication – A market for mobile communications – A Simplified Reference Model – Wireless Transmission – Multiplexing –Spread Spectrum –Cellular systems –Medium Access Control – SDMA – FDMA –TSMA- CDMA- Comparison of S/T/F/CDMA.

Unit II- Telecommunications Systems

Telecommunications Systems :GSM – Mobile Services –System Architecture – Radio Interface – Protocols – Localization and Calling –Hand over and Security –UMTS and IMT 2000- Satellite System –History – Applications –Basics –GEO 193 –LEO 194- MEO195- Routing – Localization –Handover –Examples.

Unit III- Wireless LAN

Wireless LAN : IEEE 802.11-System architecture –Protocol Architecture –Physical Layer –Medium Access Control Layer –MAC Management-802.11b 251 802.11a254-Newer Developments – HIPERRLAN –**Historical:** HIPERRLAN 1260-WATM264- BRAN275- HIPERRLAN 2 277-Bluetooth-User scenarios-Architecture –Radio Layer 296-Bassband Layer –Link manger protocol-L2CAP 305- Security 307-SDP 309-Profiles 310-IEEE 802.15 311.

Unit IV: Mobile Networks Layer

Mobile IP: Goals , assumptions and requirements- Entities and terminology – IP Packet Delivery-Agent Discovery –Registration –Tunneling and encapsulation – Optimization –Reverse Tunneling –Mobile Adhoc Networks-Routing –Destination sequence distance vector-Dynamic source routing.

Unit V: Support for Mobility

World Wide Web-Hypertext Transfer Protocol- Hypertext Markup Languages- Wireless Applications Protocol (WAP)-Architecture –Wireless Datagram Protocol- Wireless Transport Layer Security- Wireless Session Protocol – Wireless Applications Environment – Wireless markup Languages-WML Script- Wireless Telephony Applications.

TEXT BOOK:

1. Jochen Schiller, “Mobile Communication”, Pearson Education, Delhi, 2000.

UNIT I: Chapter1, Chapter 2-2.5, 2.7, 2.8, Chapter 3-3.2, 3.3, 3.4, 3.5, 3.6

UNIT II: Chapter 4-4.1, 4.4, Chapter 5

UNIT III: Chapter 7-7.3, 7.4, 7.5

UNIT IV: Chapter 8-8.1, 8.3

UNIT V: Chapter 10-10.2, 10.3

REFERENCE BOOK:

1. The Wireless Application Protocol: Writing Application for the Mobile Internet”, Sandeep Singhal, et al.

DOT NET TECHNOLOGIES

OBJECTIVE:

1. To understand the basics of .NET.
2. To understand the concepts of objects and namespaces.
3. To understand the concept of web from fundamentals.
4. To understand the concept of error handling.
5. To understand the concept of data controls.

Unit I : Introducing .NET

The Evolution of Web Development – HTML and HTML Forms, Server-Side Programming, Client-Side Programming. The .NET Framework- C#, VB, and the .NET Languages, The Common Language Runtime, The .NET Class Library. The C# Language: C# Language Basics – Variables and Data Types – Variable Operations – Object-Based Manipulation - Conditional Logic – Loops – Methods.

Unit II : Types, Objects, and Namespaces

The Basics About Classes – Static Members, A Simple Class. Building a Basic Class – Creating an Object, Adding Properties, Automatic Properties, Adding a Method, Adding a Constructor, Adding an Event. Value Types and Reference Types –Understanding Namespaces and Assemblies – Advanced Class Programming. Developing ASP.NET Applications: The Promise of Visual Studio – Creating Websites – Designing a Web Page – The Anatomy of a Web Form – Writing Code – Visual Studio Debugging .

Unit III : Web Form Fundamentals

The Anatomy of an ASP.NET Application – Introducing Server Controls – HTML Server Controls, Converting an HTML Page to an ASP.NET Page, View State, The HTML Control Classes, Event Handling, Error Handling. The Page Class –Application Events – ASP.NET Configuration. Web Controls: Stepping Up to Web Controls –Web Control Classes – List Controls – Table Controls – Web Control Events and Auto Post Back – A Simple Web Page.

Unit IV : Error Handling

Exception Handling – Handling Exceptions. State Management: The Problem of State – View State – Transferring Information Between Pages – Cookies –Session State – Session State Configuration – Application State. Validation: Understanding Validation – The Validation Controls. Rich Controls: The Calendar – The Ad Rotator – Pages with

Multiple Views. ADO.NET Fundamentals: Understanding Databases – Configuring Your Database –SQL Basics – The Data Provider – Model Direct Data Access – Disconnected Data Access.

Unit V : The Data Controls

The Grid View – Formatting the Grid View – Selecting a Grid View Row – Editing with the Grid View – Sorting and Paging the Grid View – The Details View and Form View. XML: XML Explained – The XML Classes – XML Validation – XML Display and Transforms.

TEXT BOOK:

1. Mathew MacDonald, "Beginning ASP.NET 3.5 in C# 2008: From Novice to Professional", Apress Publications,Second edition, 2007

REFERENCE BOOK:

1. Mirudula Parihar ,"ASP.NET Bible", DreamTech Publication, 2007.

MOBILE COMPUTING PRACTICAL

1. Design a different Layout design including nested layout for a single bio-data.

2. Design of simple Calculator.

3. Design of Calendar for any given month and year

4. Design a Timer to System Time.

5. Design of simple game.

6. Animation: Bouncing of a ball.

7. Animate an image.

8. Design a personal phone book containing the name, phone no., address, e-mail , etc.

9. Simulation of Authentication and encryption technique used in GSM.

10. Browsing the Internet using Mobile phone simulator

DOT NET TECHNOLOGIES PRACTICAL

1. Write C# windows application for currency conversion.

2. Write C# windows application for calculator with some scientific function.

3. Design website for online entrance examination registration form.

4. Create a job search portal by using web controls.

5. Design ASP.Net login page for website with Session and cookies.

6. Create the webpage to validate E-Mail registration.

7. Design a web page that makes uses of Ad Rotator Control.

8. Design a web page involving Multi View Control.

9. Create a MSSQL table and execute queries to read, add, remove and modify a record from that table.

10. Design website for your college department.

SOFT SKILL DEVELOPMENT

OBJECTIVE:

1. To get the idea about soft skill development.
2. To get the knowledge about error correction.
3. To gain the knowledge of proficiency in English.
4. To get the idea about group discussion, interview and presentation skills.
5. To understand the concepts of percentage and its application, inverse variation, arithmetic progression

Unit I : Reading Comprehension

Reading Comprehension-Read The Following Passage And Answer The Question Given Below-Comprehension Test Can Be Given In Different Ways-Method I, Method II, Method III , Method IV-Read The Following Passages And Answer The Questions That Follow-Fill In The Gaps With Suitable Words Form The List Of Words Given Below

Unit II : Error Correction

Error Correction –Choose The Most Appropriate Answer-Correct The Following Sentences-Choose The Correct Answer-Identify The Part Which Contains An Error. If There Is No Error Write 'D'-Choose The Correct Answer-Correct The Following Sentences-Identify The Part Which Contains An Error. If There Is No Error Write 'E'-Identify Where An Error Is Present In The Given Sentences

Unit III : Proficiency In English

Proficiency In English-I. (A)Prefixes [Skills: Willingness To Practice]-Practing Prefixes Meaning Not:-I. (B) Prefixes-Numeric's [Skills: Aptitude For Numbers]-Ii .(A) Suffixes-Ii .(B) When The Suffix Ness Is Added To Adjectives Ending In N The Resulting Noun Has Of Course A Double N-Even If "It Looks Wrong"-Iii. Try These Roots [Skills: A Drive To Tyr]-Iv. Plural Problems [Skills: Grammar, Reading]-V .Stress In Spelling [Skills: Common Sense] Vi. Spell Intelligently [Skills: Basic Spelling And Grammar]-Vii. Some Homophones [Skills: Grammar, Knowing Regulations]-Vii. Quote, Apostrophize [Skills: Grammar, Rule]-Ix. Noun, Adjective, Verb [Skills: Awareness Of How Rules Work]-X. No Confusion, Please [Skills: Clear Apprehension] Xi. Mistakes Beware [Skills: Alertness]- Xii. Correct The Fault [Skills: Self-Direction]

Unit IV: Group Discussion and Interview, Presentation Skills.

Group Discussion-Topics For Group Discussion - Interview-Preparation-Appearance-Punctuality-Handling Of The Opening Moments-Speech-Be Honest And Bold-Some Possible Questions-Exercise - Chapter-Vi: Presentation Skills-Punctuality-Handling Of The Opening Moments-Speech-Be Honest And Bold-Some Possible Questions-Preparing The Introduction Of The Presentation-Preparing The Body Of The Presentation-Check Understanding-Handling Interruptions-Preparing The Conclusion Of The Presentation-Summary/Conclusion-Cue Cards-Overhead Projector -Whiteboard-Computer-Based Presentation-Handouts

Unit V: Percentage and its Applications, Direct and Inverse Variation, Arithmetic Progression.

Percentage And Its Applications – Introduction - Some Problems On Percentage - Profit And Loss- Simple Interest - Direct And Inverse Variations – Introduction - Direct Variation - Inverse Variation - Time And Work, Time And Distance

Arithmetic Progressions –Introduction - Arithmetic Progressions - The N^{th} term Of An Arithmetic Progression - Sum Of A Finite Number Of Terms Of An Arithmetic Progression

TEXT BOOK:

1. A book on Development of Soft Skills – K.Meena & V.Ayothi. **(Entire Book)**

REFERENCE BOOKS:

1. English Companion for All Competitive Examinations – I Jayakaran, 2M Publishing International.

2. Objective English for Competitive Examinations – Hari Mohan Prasad & Uma Rani Sinha – Third Edition – The McGraw-Hill Companies.

3. Effective English Communication for You – V.Shymala – Emerald Publishers.

COMPILER DESIGN

OBJECTIVE:

1. To understand the basics of compiler design.
2. To get the knowledge about different types of parsing.
3. To understand the concept of intermediate code generation.
4. To gain the knowledge about code generation.
5. To understand the concept of optimization.

Unit I: Introduction

Compilers – Analysis of the source program – Phases of a Compiler – Cousins of the Compiler – Grouping of Phases – Compiler construction tools- Lexical Analysis- Role of Lexical analyzer- Issues in Lexical analysis- Input Buffering – Specification of Tokens.

Unit II: Different Types of Parsing

Role of Parser , Writing Grammars- Context –Free Grammars- Top Down parsing – Recursive Descent Parsing – Predictive parsing –bottom – up parsing –shift Reduce Parsing – Operator Precedent Parsing – LR Parser – SLR Parser.

Unit III: Intermediate Code Generation

Intermediate Languages –Types of three address Statement –Syntax – Directed Translation into three address code –Implementation of three address Statements – Declarations –Assignment Statements-Boolean Expressions –Methods of translating Boolean Expression –Case Statements –Back patching –Procedure calls.

Unit IV: Code Generation

Issues in the design of code generator – The target machine - Runtime storage management – Basic Blocks and Flow Graphs –Transformation of Basic Blocks - A simple code Generator – DAG representation of Basic Blocks-Peephole optimization.

Unit V: Optimization

Introduction –Principles Sources of Optimization – Optimization of basic Blocks – Introduction to Global Data Flow Analysis – Runtime Environments – Source Languages issues-Storage Organization - Storage Allocation strategies –Access to non –local names-Parameters Passing.

TEXT BOOKS:

1. Alfred Aho , Ravi Sethi, Jeffy D.Ullman, “Compilers- Principles , Tecniques and tools”, Pearson Education Asia,2007.

UNIT I: Chapter -1,Chapter -3(3.1-3.3)

UNIT II: Chapter -4(4.1- 4.7)

UNIT III: Chapter-8(8.1-8.7)

UNIT IV: Chapter-9(9.1-9.6& 9.8) Chapter-10(10.3)

UNIT V: Chapter-10(10.1,10.2,10.4,10.6)Chapter -7

REFERENCE BOOK:

1. Henk Alblas Albert Nymeyer , “Practices and Principles of Compiler Building with C”,PHI,2001

2. Kenneth C. Louden, Compiler Construction : Principles and Practices Thompson Learning,2003

NETWORK SECURITY

OBJECTIVE:

1. To understand the basics of network security.
2. To get the knowledge about public-key encryption and hash functions.
3. To get the knowledge about network security applications.
4. To gain the knowledge about IP security.
5. To understand the concept of system security.

UNIT I: Symmetric Ciphers

Introduction: Security Trends – The OSI Security Architecture – Security Attacks – Security Services – Security Mechanisms – A Model for Network Security – Symmetric Ciphers: Classical Encryption Techniques – Symmetric Cipher Model – Substitution Techniques – Transposition Techniques – Rotor Machines – Steganography.

UNIT II : Public-key Encryption and Hash Functions

Symmetric Ciphers: Block Ciphers and The Data Encryption Standards – Block Cipher Principles – The Data Encryption Standard – The Strength of DES – Differential and Linear Cryptanalysis – Block Cipher Design Principles – Public-key Encryption and Hash Functions: Public-key Cryptography and RSA – Principles of Public-key Cryptosystems – The RSA Algorithm.

UNIT III : Network Security Applications

Network Security Practices: Authentication Applications: Kerberos – X.509 Authentication Service – Public-key Infrastructure – Electronic Mail Security – Pretty Good Privacy – S/MIME.

UNIT IV:IP Security

Network Security Practices : IP Security Overview – IP Security Architecture – Authentication Header – Encapsulating Security Payload – Combining Security Associations – Key Management – Web Security: Web Security Considerations – Secure Socket Layer and Transport Layer Security – Secure Electronic Transaction.

UNIT V: System Security

Intruders – Intrusion Detection – Password Management – Malicious Software: Viruses and Related Threats – Virus Countermeasures – Distributed Denial of Service Attacks

– Firewalls: Firewall Design Principles – Trusted Systems – Common Criteria for Information Technology Security Evaluation.

TEXT BOOK:

1.William Stallings, Cryptography and Network Security – Principles and Practices, Prentice-Hall, Third Edition, 2003 ISDN: 8178089025

UNIT I : Chapter 1,2;UNIT II: Chapter 3,9;UNIT III: Chapter 14,15;UNIT IV: Chapter 16,17;UNIT V: Chapter 18,19,20

REFERENCE BOOK:

1.Johannes A.Buchaman , Introduction to Cryptography, Springer – Verlag 2000.

2. Atul Kahate , Cryptography and Network Security, Tata McGraw Hill.2000.

PHP AND MYSQL

OBJECTIVE:

1. To understand the basics of PHP and MYSQL.
2. To understand the concept of arrays and objects.
3. To gain the knowledge about getting involved with the code.
4. To understand the concept of learning MYSQL.
5. To understand the concept of MYSQL functions.

Unit I : PHP LANGUAGE STRUCTURE

The building block of PHP: Variables-data types-operators-and expressions-constants.

Flow Control Functions in PHP : Switching statements- Looping statements.

Working With Functions : What is functions? – calling function-defining a function-Return values from user defined functions-variable scope-static statement-More about argument.

Unit II : ARRAYS AND OBJECTS

Working With Arrays : Define array-types of arrays-array related functions.

Working With Classes and Objects: Creating an object-object inheritance .

Working With Strings, Dates, Times : Formatting strings with PHP-investigating strings in PHP-Manipulating string with PHP-date functions-time functions.

Unit III : GETTING INVOLVED WITH THE CODE

Working With Forms: Creating and accessing input forms –using hidden fields to save state-redirecting the user- working with file uploads.

Working With Cookies and Session: Setting cookie with PHP- starting a session-creating session variable.

Working With Files and Directories: Include()-validating files-creating and deleting files-directories function.

Unit IV : LEARNING MySQL

Understanding the Database Design Process : The importance of good database design-types of table relationships- understanding normalization and database design Process.**Learning Basic SQL Queries:** Data types in MYSQL-table creation-insert, select, where, update, replace, and delete commands.

Unit V : MySQL FUNCTIONS

String functions in MySQL-using dates function- using Times function- using Transactions - using stored procedures – MySQL with MySQLi functions.

Interaction with MySQL using PHP : Connecting to MySQL-working with MySQL data-working with XML-sample projects using PHP and MySQL.

TEXT BOOK :

1.“Sams Teach Yourself PHP, MySQL, Apache”- Julie C.Metoni

Unit I : Chapter-5,6,7 **Unit II :** Chapter-8,9,1 **Unit III :** Chapter-11,12,13

Unit IV : Chapter-15,16 **Unit V :** Chapter-17,18

REFERENCE BOOK:

1.McGrow Hill-PHP Programming solutions.

2.PHP5 and MYSQL Bible- Tim Converse, Joyce Park.

NETWORK SECURITY PRACTICAL

1. Write a networking program in Java to implement a TCP server that provides services for a TCP Client.
2. Write a networking program to implement socket programming using User datagram Protocol in Java.
3. Implement an FTP server using socket programming.
4. Implement a chat server using socket programming.
5. Implement an ECHO server using socket programming.
6. Implement Address Resolution Protocol using socket programming.
7. Implement Ping server and Ping client using socket programming.
8. Implement Single Window Protocol.
9. Implement Remote Command Execution using network programming.
10. Using Remote Method Invocation distribute the processing to three nodes.
11. Implement a program to retrieve the data for the specified URL.
12. Write a Java program to check whether the given DNS is found in the internet or not.
13. Write a program to implement multicasting.
14. Write a network program using HTTP to print the document for the given URL.

PHP AND MYSQL PRACTICAL

1. Write a PHP program to create Student Mark Statement.
2. Write a PHP Program to create Employee pay roll preparation.
3. Write a PHP program to use three buttons and change the Background color.
4. Write a PHP program to format the given text.
    i. Bold
    ii. Italic
    iii. Underline
    iv. Increase the font size
    v. Change the font color.
5. To develop a PHP program for multiply 5 sessions variables.
6. Display student Resume using Cookies.
7. Create a student database and manipulate the records in PHP.
8. Create an employee database and manipulate the records in PHP.
9. Create a course registration form with name, address and list of available course. Reply with the corresponding course fees on selection of a single course or a collection of courses.
10. Write a PHP program using list box and create Multiplication table from 1 to 20.

MASTER OF COMPUTER APPLICATIONS (M.C.A.)

LIST OF ELECTIVE COURSES

(FROM THE ACADEMIC YEAR 2016-2017 ONWARDS)

ELECTIVE – I (SEM II)

1. ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEM
2. OBJECT ORIENTED PROGRAMMING WITH C++
3. EMBEDDED SYSTEM

ELECTIVE – II (SEM III)

1. SOFTWARE ENGINEERING
2. COMPUTER GRAPHICS
3. HUMAN COMPUTER INTERACTION

ELECTIVE – III (SEM IV)

1. E-COMMERCE
2. SOFTWARE PROJECT MANAGEMENT
3. THEORY OF COMPUTATION

ELECTIVE – IV (SEM V)

1. SYSTEM SOFTWARE
2. PERVASIVE COMPUTING
3. SOFTWARE QUALITY ASSURANCE AND TESTING

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEM

OBJECTIVE:

1. To understand the basics of artificial intelligence and expert system.
2. To understand the searching techniques.
3. To understand the two knowledge about knowledge representation.
4. To understand the concept of learning.
5. To get the knowledge about applications.

Unit I : Introduction

Intelligent Agents – Agents and Environments – Good behavior – The nature of environments – Structure of agents – Problem solving – Problem solving agents – Example problems – Searching for solutions – Uniformed search strategies – Avoiding repeated status – Searching with partial information.

Unit II : Searching Techniques

Informed search and exploration – Informed search strategies – Heuristic function – Local search algorithms and optimistic problems – Local search in continuous spaces – Online search agents and unknown environments – Constrain satisfaction problems (CSP) – Backtracking search and Local search for CSP – Structure of problems – Adversarial search – Games – Optimal decisions in games – Alpha-Beta pruning – Imperfect real time decision – Games that include an element of chance.

Unit III : Knowledge Representation

First order logic – Representation revisited – Syntax and semantics for first order logic – Using first order logic – Knowledge engineering in first order logic – Inference in first order logic – Prepositional versus first order logic – Unification and Lifting – Forward chaining – Backward chaining – Resolution – Knowledge representation – Ontological Engineering – Categories and Objects – Actions – Simulation and events – Mental events and mental objects.

Unit IV : Learning

Learning from observations – forms of learning – Inductive learning – Learning decision trees – Ensemble learning – Knowledge in learning – Logical formulation of learning – Explanation based learning – Learning using relevant information – Inductive logic programming – Statistical learning methods – Learning with complete data – Learning with hidden variable – EM algorithm – Instance based learning – Neural networks – Reinforcement learning – Passive reinforcement learning - Active reinforcement learning – Generalization in reinforcement learning

Unit V : Applications

Communication – Communication as action – Formal grammar for a fragment of English – Syntactic analysis – Augmented grammars – Semantic interpretation – Ambiguity and disambiguation – Discourse understanding – Grammar induction – Probabilistic language processing – Probabilistic language models – Information retrieval – Information extraction – Machine translation.

TEXT BOOK :

1. Stuart Russell, Peter Norvig, "Artificial Intelligence- A modern Approach", 2nd edition, Pearson education / Prentice Hall of India, 2004.
   Unit-I chapter 2(2.1,2.2,2.3,2.4) 3(3.1,3.2,3.3,3.4,3.5,3.6)
   Unit-II chapter 4(4.1,4.2,4.3,4.4,4.5,4.6) 5(5.1,5.2,5.4) 6(6.1,6.2,6.3,6.4,6.5)
   Unit-III chapter 8(8.1,8.2,8.3,8.4) 9(9.1,9.2,9.3,9.4,9.5) 10(10.1,10.2,10.3,10.4)
   Unit-IV chapter 18(18.1,18.2,18.3,18.4) 19(19.1,19.2,19.3,19.4,19.5)
   20(20.1,20.2,20.3,20.4) 21(21.1,21.2,21.3,21.4)
   Unit-V chapter 22(22.1,22.2,22.3,22.4,22.5,22.6,22.7,22.8) 23(23.1,22.2,23.3,23.4)

REFERENCE BOOK :

1. Nils J.Nilsson, Artificial Intelligence: A new Synthesis", Harcourt Asia Pvt.Ltd., 2000
2. Elaince Rich and Kevin Knight, "Artificial Intelligence",2nd edition, Tata McGraw-Hill, 2003.
3. George F.Luger, "Artificial Intelligence – Structures and Strategies for complex problem solving", Pearson Education / PHI,2002.

OBJECT ORIENTED PROGRAMMING WITH C++

OBJECTIVE:

1. To understand the basics of C++.
2. To get the knowledge about classes and arrays.
3. To understand the concept of overloading.
4. To get the knowledge about inheritance.
5. To understand the advanced I/O and virtual functions.

Unit I: An Overview Of C++

What is Object Oriented Programming? – C++ Console I/O- C++ Comments – Classes: Some Different between C and C++ - Introduction Function Overloading – Constructor and Destructor Functions- Constructor take Parameters – Introducing Inheritance – Object Pointer – in line Functions – Automatic in lining.

Unit II: Classes & Arrays

Assigning Objects – Passing Objects to Functions –Returning Objects from Functions –An Introduction to Friend Functions –Arrays of Objects –Using Pointers to Objects –Using new & delete –More about new & delete –reference – Passing reference to objects – Returning references – Independent Reference and Restrictions.

Unit III: Overloading

Overloading Constructor Functions – Creating and Using a Copy Constructor – Using default arguments – Overloading and ambiguity –Finding the address of an overload functions-the basic s of operator overloading- Overloading binary Operators- Overloading the relational and logical operators – Overloading a Unary operators –Using friend Operator Functions- a closer at the assignment operator- Overloading the subscript() operator.

Unit IV: Inheritance

Base class access control- using protected members – Constructor , Destructors and inheritance – multiple inheritance – virtual bas classes- Some C++ I/O basics –Formatted I/O using Width(),Precision() and fill ()- Using I/O Manipulators –Creating your own inserters-creating extractors.

Unit V: Advanced I/O & Virtual Functions

Creating your own manipulators –File I/O basics –unformatted, binary I/O- more unformatted I/O functions – random access- Checking the I/O status – customized I/O and files –Pointers to derived classes-Introduction to virtual functions –more about virtual functions – applying polymorphism – Exception handling.

TEXT BOOKS:

1. Herbert Schildt, "teach yourself C++", III edition, Tata McGraw Hill 7th Reprint 2001.

Unit I-Chapter -1(1.1,1.3,-1.7),Chapter-2(2.1-2.4,2.6,2.7)

Unit II-Chapter -3& Chapter-4 Unit III-Chapter – 5(5.1,5.2,5.4-5.6) & Chapter -4

Unit IV- Chapter -7 & Chapter 8

Unit V- Chapter-9, Chapter-10 & Chapter-11(11.3)

REFERENCE BOOK:

1.Robert Lafore, "Object Oriented Programming in Turbo C++",Galgotia 2001

2.E.Balagurusamy "Object Oriented Programming with C++",TMH New Delhi.

EMBEDDED SYSTEM

OBJECTIVES:

1. To understand the basics of embedded system.
2. To understand the concepts of device and busses for device networks.
3. To get the knowledge about real time OS.
4. To gain the knowledge about RTOS.
5. To get the knowledge about hardware and software co-design.

Unit-I Introduction to Embedded System

An embedded system – processer in the system – other hardware units – software embedded into a system. processor and memory organization : Structural units in a processor – processor selection for an embedded system – memory devices – memory selection for an embedded system – direct memory access – processor, memories and I/O devices

Unit-II Devices and Busses for Device networks

I/O devices – timer and counting devices – device drivers – parallel port device drivers in system – serial port device drivers in system – device drivers for internal programmable timing devices – interrupt service mechanism

Unit-III Real time operating system

Operating system services – I/O subsystems – network operating system – real time and embedded operating systems – interrupt routines in RTOS environment – RTOS task scheduling models – interrupt latency and response times of the tasks or performance metrics – performance metrics in scheduling models – OS security issues – Mobile OS

Unit-IV RTOS programming tools : micro C/OS-II and Vx works

Need of a well tested and debugged real operating system – use of µC/OS-II – use of Vx works – case studies of programming with real time operating system

Unit-V Hardware – Software co-design in an embedded system

Embedded system project management – embedded system design and co-design issues in system development process – design cycle in the development phases for an embedded system – use of software tools for development of an embedded system – issues in embedded system design .

TEXT BOOK :

"Embedded System – Architecture, Programming and Design " by Raj Kamal TMH

Unit I Chapter 1,2 Unit II Chapter 3,4 Unit III Chapter 9 Unit IV Chapter 10,11 Unit V Chapter 12

REFERENCE BOOK:

1. "Embedded System Design" by Peter Marwedel, Springer International Edition
2. "Embedded System Design" by Frank Vahid / Tony Girargis, Wiley Student Edition

SOFTWARE ENGINEERING

OBJECTIVES:

1. To understand the basics of software engineering.
2. To understand the concepts of requirement engineering tasks.
3. To get the knowledge about design process.
4. To gain the knowledge about software testing.
5. To get the knowledge about software quality concepts.

UNIT I :

Introduction to software engineering – A process framework- CMMI- Process Patterns-Process Assessments- Personal and Team Process Model – Process Technology – Product and Process – Process Models : Waterfall Model – Incremental Process Model – Evolutionary Process Model – Specialized Process Model – Unified Process – Computer Based Systems – System Engineering Hierarchy – Business Process Engineering – Product Engineering – System Modeling.

UNIT II:

Requirement Engineering Tasks – Initiating the Requirements Engineering Process – Eliciting Requirements – Developing Use Cases – Building the Analysis Model – Validating Requirements – Negotiating Requirements – Requirements Analysis – Analysis Modeling Approaches – Data Modeling Concepts – Object Oriented Analysis – Scenario Based Modeling – Flow Oriented Modeling – Class Based Modeling – Creating a Behavioral Model.

UNIT III:

Design process and Design Quality – Design Concept – Design Model – Pattern Based Software Design – Software Architecture – Data Design – Architectural styles and Patterns – Architectural Design – Assessing alternative Architectural Designs – Mapping Data Flow into a Software Architecture – Components – Designing class Based Components – Conducting Component Level Design – Object Constraint Language – Designing Conventional Components.

UNIT IV:

A Strategic Approach to Software Testing – Test for Conventional Software – Test for Object Oriented Software – Validation Testing – System Testing – The Art of Debugging – Software Testing Fundamentals – Black Box and White Box Testing – Object Oriented Testing Methods – Interclass Test Case Design.

UNIT V :

Quality Concept – Software Quality Assurance – Software Reviews – Formal Technical Reviews – Formal Approaches to SQA – Statistical SQA – Software Reliability Risk: Software Risks – Risk Identification – Risk Projection – Risk Refinement – Risk Mitigation, Monitoring and Management – RMMM Plan

TEXT BOOK:

1.Roger S. Pressman, Software Engineering – A Practioner's Approach, McGraw Hill, 6th Edition

Unit I - (Chapter 1, 2 , 3 & 6) Unit II - (Chapter 7&8),Unit III - (Chapter 9,10,11),

Unit IV -(Chapter 13,14(14.1-14.7,14.9)),Unit V (Chapter 25,26)

REFERENCE BOOKS:

1. Richard Fairley , Software Engineering – Design Reliability and Management

2. Sommerville, Software Engineering, Pearson Education, 7thEdition

COMPUTER GRAPHICS

OBJECTIVE:

1. To understand the basics of computer graphics.
2. To understand the attributes of output primitives.
3. To get the knowledge about GUI & interactive input methods.
4. To understand the geometric and modeling transformation.
5. To understand the concept of color models.

UNIT I :

Overview of Computer System: Display devices –Hard copy devices-Interactive input devices-Display Processor-Graphics Software-Output primitives-Line drawing algorithms-Initializing lines –Line commends-Fill areas-Circle generation algorithms-Area functions-Cell array.

UNIT II :

Attributes of output primitives: Line style-Color and intensity-Area filling algorithm-Character attributes-Inquiry function-Bundled attributes-Two dimensional transformations-Basic and composite transformations-Translation-Rotation –Scalling- Matrix representations.

UNIT III :

GUI &Interactive input methods: Interactive input methods-Physical input methods-Logical classification of input devices-Interactive picture construction techniques-Input functions-Initial values of inputs-Device parameter-Interactive picture-Construction techniques-Virtual reality environments.

UNIT IV :

Geometric and modeling transformations: Translation-Rotation-Scaling-Other transformations functions-3D transformation function-Modeling and coordinates transformation-Projections-Clipping-Hardware implementations-3D viewing functions.

UNIT V :

Color models: Properties os lights-xyzcolr model-CIE chromaticity diagram-Intuitive color concepts-RGB color model- YIQ color model- CMY color model –HSV color model – Conversion between HSV& RGB models- HLS color model –Color Selection Applications.

TEXT BOOK:

1.”Computer Graphics” –Donald Hearn and M.Pualine Baker – PHI – 1997-3rd Edition.

Unit I - (Chapter 2&3) Unit II - (Chapter 4&5),Unit III - (Chapter 8),Unit IV - (Chapter 11), Unit V (Chapter 15)

REFERENCE BOOK:

1. “Principles of Interactive computer Graphics” – William M.Neuman and Robert F Sproul – McGraw Hill International Edition.

HUMAN-COMPUTER INTERACTION

OBJECTIVE:

1. To understand the basics of human-computer interaction.
2. To understand the interaction design basics.
3. To get the knowledge about HCI in the software process.
4. To gain the knowledge about cognitive models.
5. To gain the knowledge about task analysis.

Unit I :

The Interaction: Introduction: Models of interaction-Frameworks and HCI-Ergonomics-Interaction styles-Elements of the WIMP interface-interactivity-The context of the interaction-Experience, engagement and fun**.**

Unit II :

Interaction design basics: Introduction-what is design? – The process of design-User focus-Scenarios-Navigation design-Screen design and layout-Iteration and prototyping.

Unit III :

HCI in the software process: Introduction-The software life cycle-Usability engineering-Iterative design and prototyping-Design rationale.

Design rules: Introduction-Principles to support usability-Standards-Guidelines-Golden rules and heuristics-HCI patterns.

Unit IV :

Cognitive Models: Introduction-Goal and task hierarchies-Linguistic models-The challenge of display-based systems-Physical and device models-Cognitive architectures.

Communication and collaboration models: Introduction-Face-to-face communication-Conversation-Text-based communication-Group working.

Unit V :

Task analysis: Introduction-Differences between task analysis and other techniques-Task decomposition-knowledge-based analysis-Entity-relationship-based techniques-Sources of information and data collection-Uses of task analysis.

Dialog notations and design: What is dialog?-Dialog design notations-Diagrammatic notations-Textual dialog notations-Dialog semantics-Dialog analysis and design.

TEXT BOOK:

1.Alan Dix, Janet Finlay, Gregory D.Abowd, Russell Beale, "Human-Computer interaction" 3rd edition, Pearson Education.

Unit-1 : Chapter-1 Unit-2 : Chapter-5 Unit-3 : Chapter-6,7 Unit-4 : Chapter-12,14 Unit-5 : Chapter-15,16

REFERENCE BOOK:

1. " Human Computer Interaction fundamental", Andrew sears Julie A.Jacko.

E- COMMERCE

OBJECTIVE:

1. To understand the basics of e-commerce.
2. To gain the knowledge about network infrastructure.
3. To understand the electronic commerce and world wide web.
4. To understand the concept of electronic payment system.
5. To understand the consumer search and resource discovery.

Unit I : Welcome to Electronic Commerce

Electronic Commerce Framework - Electronic Commerce and Media Convergence – The Anatomy of E-Commerce Applications - Electronic Commerce Consumer – Applications Electronic Commerce Organization Applications. The Network Infrastructure for Electronic Commerce :Components of the High Way – Network Access Equipment – Global Information Distribution Networks.

Unit II : Internet as a Network Infrastructure

The Internet Terminology – Chronological History – NSFNET Architecture and Components – National Research and Education Network – Globalization of the academic Internet – Internet Governance – An Overview of Internet Applications. The Business of Internet Commercialization: Telco/Cable/On-Line Companies – National Independent ISPs – Regional Level ISPs – Local – Level ISPs – Service Provider – Service Provider Connectivity – Logistics of Being an Internet Service Provider – Internet Connectivity Options.

Unit III : Electronic Commerce and The World Wide Web

Architectural Framework for Electronic Commerce – World Wide Web as the Architecture – Web Background – Technology behind the web – Security and the Web, Consumer – Oriented Electronic Commerce :Consumer – Oriented Applications – Mercantile Process Model – Mercantile Models from the Consumers Perspective – Mercantile Models from the Merchants Perspective.

Unit IV : Electronic Payment Systems

Types of Electronic Payment Systems – Digital Token based Electronic Payment Systems – Smart cards and Electronic Payment System – Credit card – Based Electronic Payment Systems – Risk and Electronic Payment Systems – Designing Electronic Payment Systems. Inter Organizational Commerce and EDI: Electronic Data Interchange – EDI Applications in Business – EDI: Legal, Security and Privacy issues – EDI and Electronic Commerce.

Unit V : Consumer Search and Resource Discovery

Information Search and Retrieval – Electronic Commerce Catalogs – Information Filtering – Consumer – Data Interface – Emerging Tools .on Demand Education and Digital Copyrights: Computer-Based Educational and Training – Technological Components of Education on Demand – Digital Copyrights and Electronic Commerce. Software Agents – Applets, Browsers and Software Agents.

TEXT BOOK:

1."Frontiers of Electronic Commerce" , Ravikalakota & Andrew Whinston,Adison Wesley 2000.

Unit I: Chapter 1,2 – 2.2,2.3,2.5 Unit II: Chapter 3,4

Unit III: Chapter 6,7 Unit IV: Chapter 8,9 Unit V: Chapter 14,15,16-16.2,16.3,16.6

REFERENCE BOOK:

1. "Electronic commerce" , Pete Loshin & Paul A.Murphy, Second edition, Jaico Publishing House,2000.

SOFTWARE PROJECT MANAGEMENT

OBJECTIVE:

1. To understand the basics of software project management.
2. To understand the software management, project management, process frame work.
3. To get the knowledge about management disciplines.
4. To gain the knowledge about project control.
5. To get the knowledge about risk management.

UNIT I : Software Management Renaissance

Software Management Renaissance: Conventional Software Management – Evolution of Software Economics – Improving Software Economics – The Old Way and The New.

UNIT II : A Software Management Project Management Process Framework

A Software Management Project Management Process Framework: Life-Cycle Phases-Artifacts of the Process – Model – Based Software Architectures – Work Flows of the Process – Check Points of the Process.

UNIT III : Software Management Disciplines

Software Management Disciplines: Iterative Process Planning – Project Organizations and Responsibilities- Process Automation.

UNIT IV : Software Management Disciplines

Software Management Disciplines: Project Control and Process Instrumentation – Tailoring the Process.

UNIT V : Risk Management

Risk Management: Introduction – Risk – Categories of Risk – A Framework for Dealing with Risk – Risk Identification – Risk Assessment – Risk Planning – Risk Management – Evaluating Risk to Schedule – Applying the PERT Technique – Monte Carlo Simulation – Critical Chain Concepts.

TEXT BOOKS:

1.Software Project Management, bob Hughes & Mike Cotterell,

ISBN: 9780070619852) 2006 edition

(Unit I:Chapter 1,2,3,4 Unit II: Chapter 5,6,7,8 Unit III: Chapter 10,11,12,13,14 Unit IV: Chapter 15,16,17).

2.Software Project Management, "Walker Royce, Pearson Education,

ISBN: 8177583786 2006 edition **(Unit V:Chapter 7)**

REFERENCE BOOK:

1. Software Engineering, Roger S.Pressman ,TMH Publications 2006

THEORY OF COMPUTATION

OBJECTIVE:

1. To understand the basics of theory of computation.
2. To understand the regular expression and regular grammar.
3. To gain the knowledge context free language.
4. To understand the Push Down Automata(PDA).
5. To gain the knowledge Turing machines.

Unit I :

Introduction to Theory of Computation-Finite State Machines: Definition and Description of an Automata-Transition System-DFA-Acceptability of a string by a Finite Automata-NFA-Equivalence of NFA and DFA-NFA E-Transitions-Construction of NFA without E-moves from NFA with E-moves-Minimization of FA-Finite Automata with outputs-Equivalence between Moore and Mealy machines-Equivalence of two Finite State Machines

Unit II :

Regular Expressions and Regular Grammars-Regular Sets and Properties: Pumping Lemma for Regular Sets-Applications of Pumping Lemma-Closure Properties of Regular Sets-Decision Algorithms for Regular Sets-The Myhill-Nerode Theorem and Minimization of Finite Automata

Unit III :

Context Free Language: Introduction-Context Free Grammars-Derivation Trees-Left Most derivation and Right Most Derivation-Ambiguity in CFG-Simplification of CFG-Normal Forms-Chomsky Normal Forms(CNF)-Greibach Normal Form(GNF)

Unit IV :

Push Down Automata(PDA): Basic Definition and model of PDA-Deterministic Push Down Automata-Non-Deterministic Push Down Automata-Equivalence of Acceptance by Final State and Empty Stack-Push Down Automata and CFL's-The Pumping Lemma for CFL's-Applications of Pumping Lemma-Closure Properties of CFL's-Decision Algorithms for CFL's-Membership

Unit V :

Turing Machines: Turing Machine Model-Representation of TM-Language Acceptance-Design of TM-Recursively Enumerable Languages- Church's Hypothesis-Counter Machine-Types of TM's

TEXT BOOK:

1."Theory of Computation, Formal Languages and Automata Theory"- G.P.Sarathi Varma, B.Thirupathi Rao, Scitech Publications.

Unit I –(Chapter 1, Chapter 2); Unit II – (Chapter 3, Chapter 4);Unit III –(Chapter 5); Unit IV- (Chapter 6);Unit V – (Chapter 7)

REFERENCE BOOKS:

1.Introduction to Theory Of Computation- C.Martin. Tata McGraw Hill.

SYSTEM SOFTWARE

OBJECTIVE:

1. To understand the basics of theory of system software.
2. To understand the concept of assemblers.
3. To gain the knowledge about macros and macro processors.
4. To understand the concepts of compilers and interpreters.
5. To gain the knowledge about linkers.

UNIT-I:

Language processors – Language processing activities and fundamentals – Language specification – Development Tools – Data structures for language processing – scanners and Parsers.

UNIT II:

Assemblers : Elements of assembly language programming – Overview of assembly process – Design of two-pass assembler – A single pass assembler for IBM PC.

UNIT-III :

Macros and Macro processors – Macro definition, call and expansion – Nested macro calls – Advanced macro facilities – Design of macro preprocessor – Compilers : Aspects of Compilation.

UNIT-IV:

Compilers and Interpreters – Memory allocation – Compilation of Expressions and Control structure – Code optimization – Interpreters.

UNIT-V:

Linkers: Linking and Relocation concepts – Design of linker – Self relocating programs – A linker for MS DOS – Linking for over-lays – loaders – Software tools : Software tools for program development – Editors – Debug monitors – Programming environments – User interfaces.

TEXT BOOK :

1.D.M. Dhamdhere, 1999, “Systems Programming and Operating Systems”, Second Reviced Edition, Tata McGraw-Hill, New Delhi.

Unit I –(Chapter 1, Chapter 2); Unit II – (Chapter 3, Chapter 4);Unit III –(Chapter 5); Unit IV- (Chapter 6);Unit V – (Chapter 7)

REFERENCE BOOK :

1.L.L. Beck, 1996, System Software An Introduction to System Programming, 3rd Edition, Addison-Wesley.

PERVASIVE COMPUTING

OBJECTIVE:

1. To understand the basics of pervasive computing.
2. To understand the device technology.
3. To understand the concept of device connectivity.
4. To gain the knowledge about WAP and Beyond.
5. To get the knowledge about personal digital assistant.

Unit I: Pervasive Computing

Pervasive Computing : Past, Present and Future – Pervasive Computing Market – M-Business – Application examples: Retail, Airline check-in and booking – Health care – Car information system – E-mail access via WAP and voice.

Unit II : Device Technology

Device technology : Hardware – Human machine interfaces – Biometrics – Operating Systems – Java for Pervasive devices.

Unit III : Device Connectivity

Device Connectivity : Protocols – Security – Device management – Web application concepts: WWW architecture – Protocols – Transcoding – Client authentication via internet.

Unit IV : WAP and Beyond

WAP and Beyond : Components of WAP architecture – WAP infrastructure – WAP security issues – WML – WAP push – Products – i-mode –Voice technology : Basics of speech recognition – Voice standards – Speech applications – Speech and Pervasive Computing.

Unit V: Personal Digital Assistant

PDA : Device categories – PDA operation systems – Device Characteristics – Software components – Standards – Mobile Applications – PDA Browsers – Pervasive web application architecture : Background – Development of pervasive computing web applications – Pervasive application architecture.

TEXT BOOK :

1. Pervasive Computing, Technology and Architecture of Mobile Internet Applications, Jochen Burkhardt, Horst Henn, Stefan Hepper, Thomas Schaech & Klaus Rindtorff, Pearson Education,2006.

Unit I - Chapter 1 2, Unit II - Chapter 3, Unit III Chapter 4,5 Unit IV - Chapter 6,7 Unit V Chapter 8,10

REFERENCE BOOK :

1. Fundamentals of mobile and pervasive computing, Frank Adelstein, Sandeep K S Gupta, Golden Ricard III, Loren Schwiebert, McGraw Hill edition, 2006.

SOFTWARE QUALITY ASSURANCE AND TESTING

OBJECTIVE:

1. To understand the basics software quality assurance and testing.
2. To get the knowledge about types of testing.
3. To understand the testing fundamentals and specialized testing.
4. To gain the knowledge about test management.
5. To get the knowledge about test automation.

Unit I : Introduction

Principles of Testing - Software Development Life Cycle Models.

Unit II : Types of Testing

White Box Testing - Integration Testing - System and acceptance testing.

Unit III : Testing Fundamentals - 2 & Specialized Testing

Testing Performance Testing - regression testing - Testing of Object Oriented Systems - Usability and Accessibility Testing.

Unit IV : Test Management

Testing Planning, Management, Execution and Reporting.

Unit V : Test Automation

Software Test Automation - Test Metrics and Measurements

TEXT BOOK:

1. "Software Testing" - Srinivasan Desikan, Gopalaswamy Ramesh, Pearson Education, 2006.

Unit I (Chapters - 1, 2); Unit II (Chapters – 3, 5, 6); Unit III (Chapters – 7, 8, 11, 12);

Unit IV (Chapters – 15); Unit V (Chapters – 16, 17)

REFERENCE BOOK:

1. Introducing Software testing - Louis Tamres, Addison Wesley Publications, First Edition