DCS-501– WEB TECHNOLOGY

UNIT–I

Introduction To Web Design Web page and Web site: Web publishing Process of Web, publishing, planning, organizing, Hierarchical, Linear, Webbed, Implementing, Testing, Maintenance.

UNIT-II

HTML: Introduction, Head section, Prologue, Link, Base, Meta, Script, Style, Body Section – Header, Paragraphs, Text Formatting, Linking, Internal Linking, Embedding Images, Lists, Tables, Frames. Other Special Tags and Characters, HTML Forms**.**

UNIT-III

Java Script: Introduction, Language Element, Identifiers, Expressions, Keywords, Operators, Statements, Functions, Object of Java Scripts, Window Object, Document Object, Forms Objects, Text Boxes and Text Areas, Buttons, Radio Buttons and Check Boxes, The Select Object, Other Object, The Date Object, The Math Object, The String Object, Regular Expressions, Arrays, Worked Examples.

UNIT-IV

DHTML: Introduction Cascading Style Sheet (CSS) – Coding, Properties of Text, Property Values, Other Style Values, In-Line Style Sheet, Embedded Style Sheet, External Style Sheet, Grouping, Inheritance, Classes as Selector, ID as Selector, Contextual Selector, Pseudo Classes and Pseudo Elements, Positioning, Backgrounds, Element Dimensions, DHTML Document Object Model and Collections, Using the Collection all, Moving object around the documents, Event Handling, Assigning Event Handlers, Even Bubbling, Filters and Transactions, Data Bindings, Using Tabular Data Control, Sorting Data, Dynamic Sorting, Filtering.

UNIT-V

XML Basics: Introduction HTML vs XML, Syntax of the XML Document, XML Attributes

REFERENCES:

1. Allen D.W. & Steve Johnson; the Learning Guide to Internet; B.P.B. Publication.
2. Alexis Leon and Matthew Leon; Internet for every one; Vikas publishing house Pvt. Ltd.New Delhi
3. Internet for Dummy, Pustak Mahal, New Delhi
4. Dixit Manish (1999); Internet, An Introduction, CI Stems TMH Series , Tata McGraw Hill publishing company limited, New Delhi.
5. Design Web Pages, BPB Publication.

LIST OF EXPERIMENTS:-

1. Design a Home Page of Website using HTML Tags.
2. Write an HTML Document to provide a form that collects names and phone numbers.
3. Write a program in Java Script to compare numbers whose inputs will be taken from HTML Form.
4. Write a JAVA Script function to display current date and time using Date Object.
5. Write a Java Script to generate Random Numbers.
6. Design three pages of your Home Page and link all of them to a single style sheet.
7. Design a web page that demonstrates blinking and scrolling text.
8. Design a e Commence Site displaying the detail of the items that are sold in that store. The Site should provide a feature to sort the items based on the prize of the Items.
9. Design a XML document using basic syntax.
10. Uploading websites on FTP and Local Server.

DCS-502– JAVA PROGRAMMING

UNIT-I

Overview Of Java Language Java: And its support systems, JAVA environment, JAVA program structure, Tokens, Statements, JAVA virtual machine, C++ Versus JAVA, Constants & Variables, Data Types, Declaration of Variables, Scope of Variables, Symbolic Constants, Type Casting, Operators: Arithmetic, Relational, Logical Assignments, Increment & Decrement, Conditional, Bit wises, Special, Expressions & its Evaluation. Control statements: If statements and its variant, Switch statement,? Operator, While loop, Do while loop, For loop, Break and continue, Labeled Loops.

UNIT-II

Classes, Objects & Methods: Defining a Class, Adding Variables & Methods, Creating Objects, Accessing Class Members , Constructors, Methods Overloading, Static Members, Nesting of Methods, Inheritance: Extending a Class, Overriding Methods, Concept of public, private and protected, Final Variables & Methods, Final Classes, Finalizer Methods, Abstract methods & Classes, Static class, Visibility Control.

UNIT-III

Arrays, Strings & Vectors: Arrays One Dimensional & two Dimensional, strings, Vectors, wrapper Classes, Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interfaces Variables, Systems Packages, Using System Packages, Naming Conventions, Creating Packages, Accessing a Package, Using Package, Adding a Class to a Package, Hiding Classes.

UNIT-IV

Multithreaded Programming: Creating Threads, Extending the Threads Class, Stopping & Blocking a Thread, Life Cycle of a Thread, Using Thread Methods, basic exception handling, Threads Exceptions, Thread Priority, Synchronization, Implementing the Runnable Interface.

UNIT-V

Applet Programming: Local & Remote Applets, Applets Vs Applications, Writing Applets, Applets Life Cycle, Creating an Executable Applet, Designing a Web Page, Applet Tag, Adding Applet to HTML File, Running the Applet, Passing Parameters to Applets, Aligning the Display, HTML Tags & Applets, Getting Input from the User.

REFERENCES:

1 E. Balaguruswami, Programming in Java, 2nd Edition, TMH Publications.
2 Herbert Shield, java complete reference TMH publication**.**

LIST OF EXPERIMENTS:-

1. Programs using various decision making & looping statements of JAVA.
2. Programs to demonstrate the use of array, Class & packages.
3. Programs using Concept of public, private and protected, Final Variables & Methods.
4. Programs using Final Classes, Finalizer Methods, Abstract methods & Classes, Static class, Visibility Control.
5. Program for creating & extending thread.
6. Programs to demonstrate the use of multiple threads.
7. Programs to create an applet for "HELLO " & call this in HTML.
8. Programs to demonstrate the use of various applet tags, Designing data entry forms using various building blocks at client side.
9. Program to connect single & multiple databases using JDBC concept.
10. Program to read & write a text file.
11. program for GUI design using joption pane class.

DCS-503- HARDWARE INSTALLATION AND MAINTENANCE

UNIT-I

PC Fundamentals: Elements of Computers, Processors Specifications, SMPS, Types of data cables and power cables, Types of connectors, headers I/O Ports, Serial, Parallel, USB, Chipset, Video system, sound system, Drive system, MODEM, USB Printers.

UNIT-II

Motherboard: Motherboard Controllers & System Resources, Memory Mapping, Interrupts Request Line (IRQ)Purpose, Standard Assignments, Conflicts, Sharing & ISA, PCI, PnP Configuration of IRQ, System Buses, Industry Standard Organization, Micro Channel Architecture, Enhanced Industry Standard Architecture, UESA Local Bus, Peripheral Component Interconnect, Accelerated Graphics Ports, PCI-X, Chipsets - Northbridge & South Bridge, Function of Chipset, Motherboard form factor & Power supplies- AT, ATX, LPX & NLX, Voltage & Signal Lines, Power Supply Quality & Specifications, Form Factors, Ribbon Cable and Adopter Card Installation, Batteries - charging, rating, CMOS backup Batteries, Backup Battery replacement.

UNIT-III

Microprocessor: Processor Specification, Clock Speed, FSB, L1, L2 & L3 cache, Processor over clocking, CPU - RISC & CISC Microprocessor, CPU Packaging - DIP, PGA, SPGA, MCM, LCC, PLCC & Tape Carrier Package, Intel CPU Family, Fifth generation & Sixth Generation P6, Xeon, Celeron Processor, AMD CPU Family - Fifth, Sixth, & Seventh Generation K Series, Athlon, Thunderbid & Duron Processor Handling & Replacement of CPU, CPU Configuration FSB, Core Speed, Core Voltage Configuration.

UNIT-IV

Memory: Logical Organization of Memory - Real Mode, Protected Mode, Lower, BIOS Data Area, Upper Memory, High Memory Area, Frame Buffer, Shadow & Cache, Memory Packaging- DTPP, STPP, SIMM, DIMM, RIMM, RAM Types- EDO, SDRAM, VRAM, SGRM, RDRAM, DDRAM, PPRAM, DDR 1, DDR 2, DDR 3, Memory Performance - Speed, Inter living & Caching, Interfaces - IDE, ATA 1 to 6, Mater Slave Configuration, SCSI, SATA, PATA, SCSI Interface- BUS ID, Logical Unit Number, Termination, Signaling Types, SCSI Standards, Comparison between IDE & SCSI, Optical Storage Devices - CD, DVD, and Blu-ray Disc.

UNIT-V

BIOS: BIOS Functions, Cold & Warm Booting, BIOS Error Codes, BIOS Interrupts, Identification of Different BIOS (AMI & AWARD BIOS), BIOS Memory Assignments, BIOS Advance setup.

REFERENCES:

1. Subhadeep Choudhary, The A-Z of PC Hardware & Maintenance part I and II.
2. Govindrajalu, IBM PC and Clones.
3. Balasubramanyam, Computer Installation and Servicing.

LIST OF EXPERIMENTS: -

1. Preparing the case.
2. Installation and troubleshooting the Motherboard.
3. Installation and troubleshooting the CPU.
4. Installation and troubleshooting the heat sink and cooling fan.
5. Installation and troubleshooting RAM.
6. Installation and troubleshooting SMPS to different devices.
7. Installation and troubleshooting the hard-drive and its cables.
8. I Installation and troubleshooting optical drives.
9. Installation and troubleshooting the video card, sound cards and other cards.
10. Installation and troubleshooting PCI.
11. Installation and troubleshooting Expansion cards.
12. Operating System Installation i.e. Windows and Open Source OS (Linux, SUN).
13. Device Driver Installation.

DCS-504- SOFTWARE ENGINEERING

UNIT-I

Introduction To Software Engineering: Software characteristics, Software myths, Components, application, process, methods, tools & view of S/E, software process Capability Maturity Model, life cycle models (water fall, incremental, spiral, RAD, prototyping, object oriented) fourth generation model.

UNIT- II

Software Project Planning: Responsibilities of Software Project manager, Project planning Objective, Software scope, Software project estimation technique, Decomposition techniques, Estimation models, Scheduling, staffing, Risk Management, Software configuration Management.

UNIT-III

Software Requirement Analysis, Specification & Modeling: Analysis principles, system specification, software requirement specifications, functional specifications, software prototyping, specification, data modeling, data flow diagrams, ER Diagram, Mechanics of structured analysis, data dictionary.

UNIT-IV

Object Oriented Concept: Object Oriented Concepts, Unified Modeling language Diagram(Use Case Diagram, Class Diagram, Sequence Diagram, State Chart Diagram)Elements Of Object Modeling, Management Of Object Oriented Software Projects, Object Oriented Analysis, Domain Analysis, OOA Process Conventional v/s OO Approach, Object Relationship Model.

UNIT-V

Design Concept Principle And Methods: Design Process, Design Principles, Design Concepts, Effective Modular Design, Design Documentation, Architectural Design, and Architectural Design Process Optimization, Procedural Design.

REFERENCES:

1. Software engineering A Precise Approach by Pankaj Jalote's ,Wiley India.
2. Rajib Mall, Fundamental of Software Engineering, PHI.
3. Software Engineering by Kassem A. Saleh J.Ross Publishing
4. Ron Patton, Software Testing, BPB.
5. Gazzi, Fundamental of Software Engineering, PHI.
6. Maryhauser Anneliese Von, Software Engineering Methods Management, Academic Press.
7. Wirts Brock Elal, Designing object oriented software, PHI.

LIST OF EXPERIMENTS: -

- Provide an introduction to Software Engineering as a professional discipline.
- Provide insight and understanding of the context and constraints within which software is developed.
- Provide a clear understanding of processes, methods, activities, tools and techniques involved in professional Software Engineering.
- Equip students with the theory, tools and techniques for professional software development and software project management.
- Provide students with the opportunity to participate in practical software engineering tasks.
- Empower students to be able to develop software in a systematic, structured and rigorous manner.

DCS-505[A]-WIRELESS COMMUNICATION AND MOBILE COMPUTING

UNIT-I

Introduction to wireless technology: Comparison of wired and wireless mechanism, Basic equipments in wireless communication, Wireless access point, Wireless access cards, routers etc, Various types of wireless communication technologies used in Mobiles, Antennas etc, Concept of spread spectrum, Various types of spread spectrum, Spreading sequences.

UNIT-II

Wireless LAN: Wireless local loops, Wireless access protocols, Various types of wireless, LAN technologies like infrared, microwave LANs etc, IEEE 802.11x standards for wireless LANs.

UNIT-III

Cellular system infrastructure: Cell fundamentals, Cell site, cell capacity, frequency reuse clustering, co channel interference, Cell splitting, cell sectoring, Mobile station(MS), Base transceiver station (BTS), Mobile switching center(MSC), Functions of MSC, Base station system, Base station control, HLR,VLR, Mobile station(MS) registration.

UNIT-IV

GSM Technology: GSM network architecture, GSM channel concepts, logical channels, Broadcast channel, Common control channel & dedicated control channel, GSM identities, Mobile station associated numbers, Network Numbering plans, mobile station roaming number, GSM system operation, GSM call setup phase, GSM call confirmation and call accepted, GSM location updating, GSM Connection release, Overview of CDMA technology.

UNIT-V

Reflection & Propagation models: Mobile radio propagation, Ground reflection model, Diffraction sculpturing, Indoor propagation models, Outdoor propagation models, Ray tracing.

REFERENCES:

1. “Wireless Communication and Networks” by William Stallings, 1st edition.
2. “Wireless and Mobile Network Architectures” by Yi-Bing Lin and Imrichchlamtac .
3. Wireless & Cellular Telecommunications, 3/e,Dr. William C.Y. Lee,TMH.
4. Introduction to Wireless telecommunication systems and networks,Mullett,cengage learning.
5.Wirless Communication : Principle and practice – T.S. Rappaport.
6. Mobile Communication – Schwartz.

DCS-505[B] THEORY OF COMPUTATION

UNIT-I

Automata theory: Basic machine, FSM, Transition graph, Transition matrix, Deterministic and nondeterministic FSM'S, Equivalence of DFA and NDFA, Mealy & Moore machines, minimization of finite automata, Two-way finite automata, Regular Sets and Regular Grammars, Alphabet, words, Operations, Regular sets, Finite automata and regular expression, Pumping lemma and regular sets, Application of pumping lemma, closure properties of regular sets.

UNIT-II

Context Free Grammars: Introduction to CFG, Regular Grammars, Derivation trees and Ambiguity, Simplification of Context free grammars, Normal Forms (Chomsky Normal Form and Greibach Normal forms).

UNIT-III

Pushdown Automata: Definition of PDA, Deterministic Pushdown Automata, PDA corresponding to given CFG, CFG corresponding to a PDA, Context Free Languages, The pumping lemma for CFL's, Closure properties of CFL's, Decision problems involving CFL's.

UNIT-IV

Turing Machines: Introduction, TM model, representation and languages acceptability of TM, Church's hypothesis, composite & iterated TM, Turing machine as enumerators, Properties of recursive & recursively enumerable languages, Universal Turing machine.

UNIT-V

Related Problems: P, NP, NP complete and NP hard problems, examples of these problems like Hamiltonian path problem, traveling sales man problem etc.

REFERENCES:

1. John E. Hopcroft, Jeffery Ullman,"Introduction to Automata theory, Langauges & computation" Narosa Publishers.
2. K.L.P Mishra & N.Chandrasekaran,"Theory of Computer Science", PHI Learning.
3. Michael Sipsev,"Theory of Computation",Cenage Learning.
4. John C Martin, "Introdution to languages and theory of computation", McGraw Hill.
5. Daniel I.A. Cohen,"Introduction to Computer Theory",Wiley India.
6. Kohavi,"Switching & Finite Automata Theory",TMH.