SEMESTER 6

BCA601: WEB TECHNOLOGY

UNIT I: INTERNET- Basics of internet- Addresses & names for the internet, Web objects & site , E-mail, WWW, File transfer, The TELNET , The USENET , Gopher, Wais, Archie, Veronica, Internet chat, Web server, Proxy server, Fast ready connections to the Web, Web Browser.

UNIT II : HTML, Basic HTML, Document Body Text, Hyperlink, Adding more formatting, LISTS- Using Colour & images- Tables, Multimedia objects, Frames, forms- MARQUEE.

UNIT III: DHTML,Cascading ,style sheets, Introduction using styles,Working simple examples, Defining your own styles, Properties & values in styles , Style sheets A worked example , Formatting blocks of information

UNIT IV: Java script Introduction to Java script Basics Variables String manipulation Mathematical Functions Operations Arrays Functions Objects in Java script- regular expressions Built- in objects Data validation Messages & Confirmation Status bar- Writing to a different frame.

UNIT V: PHP Introduction to PHP , Including PHP in a page , Datatypes , Program Control, Arrays , User defined functions, Built-in Functions , Regular expressions Using files

Book of study :

1. Internet & Web Technologies, Raj Kamal, Tata Mc Graw Hill
2. Web Programming, Chris Bates, 3 rd Edition; Pub: John Wiley & Sons

Reference 1.HTML Black Book, Steven Holzner, Dreamtech Publishers

BCA602: Software Engineering

Unit I: Introduction to Software Engineering Definition, Program Vs Software, and Software process, Software Characteristics, Brief introduction about product and process, Software process and product matrices.

Software life cycle models Definition, Waterfall model, Increment process models, Evolutionary process models, Selection of a life cycle model.

(Chapter 1 and 2)

Unit II: Software Requirement Analysis and Specification Requirements Engineering type of requirements, Feasibility Studies, Requirement Elicitation, Various steps for requirement analysis, Requirement documentation, Requirement validation, an example to illustrate the various stages in Requirement analysis. Project planning-Size estimation, cost estimation, the constructive cost model (COCOMO)

(Chapter 3 and 4)

Unit III: Software Design - Definition, Various types, Objectives and importance of Design phase, Modularity, Strategy of design, Function oriented design, IEEE recommended practice for software design descriptions. Steps to Analyze and Design Objected Oriented System. Software Reliability Definition, McCall software quality model, Capability Maturity Model

(Chapter 5 and 7)

Unit IV: Software Testing What is testing?, Test, Test case and Test Suit, Verification and Validation, Alpha, beta and acceptance testing, functional testing, techniques to design test cases, boundary value analysis, Equivalence class testing, decision table based testing, cause effect graphing technique, Structural testing path testing, Graph matrices, Data flow testing; Levels of testing Unit testing, integration testing, system testing, validation testing, a brief introduction about debugging and various testing tools.

(Chapter 8)

Book of Study:

K K Aggarwal, Yogesh Singh
Software Engineering (Third Edition)
New Age International Publications

Reference:

1. Ian Sommerville
Software Engineering VII th Edition Pearson Education
2 Pankaj Jalote
An Integrated approach to Software Engineering
Narosa Publishing Company, Second Edition.
Pearson Education

BCA603(A): Client Server Computing

Unit 1

Overview of C/S Computing: Definition, Benefits & Evolution, Hardware & Software, Trends, Evolution of operating systems, networking trends.

Overview of C/S applications: components, classes, categories.
Overview of C/S computing: Dispelling the Myths, Obstacles- Upfront and hidden, open systems and standards, Standards setting organizations, factors of success.

Unit 2

Client hardware and software: Client components and operating systems. What is GUI?,Xwindow vs. windowing, database access.
Application logic client software products: GUI environments, converting 3270/5250 screens, database access tools.
Client requirements: GUI design standards, Open GUI standards, Interface dependents, testing interfaces, development aides.

Unit 3

Server hardware: Benchmarks, categories of servers, features and classes of server machines.
Server Environment: eight layers of softwares, network management and computing environments, extensions, network operating systems, loadable modules.
Server operating systems: OS/2, Windows new technology, UNIX based operating systems.

Unit 4

Server Requirements : Platform independence, transaction processing, connectivity, intelligent database, stored procedures, Triggers, Load Leveling, Optimizer, testing and diagnostics tools, real ability backup and recovery mechanisms.
Server data management and access tools: Data manager features, data management software, database gateways. LAN hardware and software, Network Operating Systems.

Text

1. Dawna Travis Dewire , Client Server Computing, McGraw Hill International

References

1. Tanenbaum and Van Steen, Distributed Systems Principles and Paradigams, Pearson Education, 2005
2. Orfali,Harkey and Edwards, The Essential Client server Survival guide, 2nd edition Galgotia, 2003
3. Jeffrey.D.Schan, C/S Application and Architecture, Novell Press, BPB
4. Joe Salami, Guide to C/S Databases, Bpb Publn., 1994
5. David Vaskevitch , Client Server Strategies, Galgotia, 1994.

BCA603(B):&#65533; Linux Operating System

Unit 1:

Linux introduction and file system - Basic Features, Advantages, Installing requirement, Basic Architecture of Unix/Linux system, Kernel, Shell - Linux File system - Boot block, Super block, Inode table, Data blocks, Linux standard directories. Commands for files and directories cd, ls, cp, rm, mkdir, rmdir, pwd, file, more, less, Creating and viewing files using cat, file comparisons, View files, disk related commands, checking disk free spaces.

Unit 2:

Essential Linux commands, Understanding shells, Processes in Linux, process fundamentals, connecting processes with pipes, redirecting input/output, Background processing, managing multiple processes, scheduling of processes. Batch commands, kill, ps, who, Printing commands, find, sort, touch, file, file processing commands - wc, cut, paste etc - mathematical commands - expr, factor etc. Creating and editing files with vi editor

Unit 3:

System administration - Common administrative tasks, identifying administrative files configuration and log files, Role of system administrator, Managing user accounts-adding & deleting users, changing permissions and ownerships, Creating and managing groups, modifying group attributes, Temporary disabling of users accounts, creating and mounting file system, checking and monitoring system performance - file security & Permissions, becoming super user using su. Getting system information with uname, host name, disk partitions & sizes, users, kernel, installing and removing packages with rpm command

Unit 4:

Shell programming - Basics of shell programming, various types of shell available in Linux, comparisons between various shells, shell programming in bash

Conditional and looping statements, case statement, parameter passing and arguments, Shell variables, system shell variables, shell keywords, Creating Shell programs for automating system tasks

Unit 5:

Simple filter commands pr, head, tail, cut, sort, uniq, tr - Filter using regular expression grep, egrep, sed **Understanding various Servers** DHCP, DNS, Squid, Apache, Telnet, FTP,Samba.

Book of study :

1. Red Hat Linux Bible by Cristopher Negus, Wiley Dreamtech India

2. UNIX Shell Programming by Yeswant Kanethkar, BPB

References :

1. Official Red Hat Linux Users guide by Redhat, Wiley Dreamtech India
2. UNIX for programmers and users by Graham Glass & King Ables, Pearson Education
3. Beginning Linux Programming by Neil Mathew & Richard Stones, Wiley Dreamtech India

BCA603(C) : DATA MINING

Unit I: Introduction Data Mining, Data Ware House, Transactional Databases, Data Mining Functionalities Characterization and Discrimination, Mining frequent patterns, Association and correlation, Classification and Prediction, Cluster Analysis, Classification of Data Mining Systems, Data Mining Task Primitive, Integration of Data Mining systems, Major issues in Data Mining, Data integration and transformation, Data reduction, Data discretization.

(Chapter 1)

Unit II: Data Warehouse and OLAP technology Data Warehouse, Multidimensional data Model, Data warehouse architecture, Data Warehouse implementation, OLAP, Data Warehouse and data mining.

(Chapter 2, 3)

Unit III: Association Rules and Classification Concepts Efficient and Scalable Frequent item set Mining methods, Mining various kind of association rules, from association mining to Co-relation analysis, Classification and prediction, Issues, Classification by Decision tree induction, Bayesian Classification, Rule-based classification, Support Vector Machines, Learning from your neighbors, Prediction.

(Chapter 5, 6)

Unit IV: Cluster Analysis Definition, Types of data in cluster analysis, A categorization major Clustering methods- Partitioning methods, K-means and k-medoids, from k-medoids to CLARANS, Hierarchical methods, Density based methods.

(Chapter 7)

Unit V: Mining Complex Data Spatial Data Mining, Multimedia Data Mining, Text Mining and Mining WWW.

(Chapter 10)

Book of study:

Jiawei Han and Micheline Kamber
Data Mining - Concepts and Techniques (Second Edition)

Elsevier, 2006

Reference:

1. Witten and Frank
   Data Mining Practical Machine Learning Tools and Techniques (Second Edition)
   Elsevier, 2005
2. Soman, Divakar and Ajay
   Data Mining Theory and Practice
   PHI, 2006

BCA603(D) System Software

Unit 1:

System software and application software-general concepts. Language processing concepts**:** Introduction, Language Processing activities, Fundamentals of Language Processing, Fundamentals of Language specification. Phases of language processor.

Unit II

Assembly Language statements- imperative, declarative, assembler directive, Elements of assembly language programming- forward reference problem, design of two pass assemblers and single pass.Marcos: Macro Definition, macro call, macro features, **Unit III**

Compliers: Aspects of compilation, Phases of compiler, syntactic structure of language, Grammars-classification, Scanning, Parsing techniques- representation of parse tree-intermediate code generation-loop optimization.

Unit IV

Linkers and Loaders :Various types of loaders linking and relocation concepts.

Book of study :

1. Principles of Compiler Design by Aho and Ullman
2. Systems programming and Operating Systems by D.M. Dhamdhere, Second Revised Edition, published by Tata McGraw Hill

Reference:

1. Introduction to System Programming , Leland L. Beck -3rd Edition-Pearson Education

BCA 604 Seminar

The student shall choose a modern topic of current day interest in the areas of Computer Science / Information Technology and present a seminar using appropriate presentation media such as LCD projector, OHP etc. A seminar report in bound form in the pattern of a complete technical report (with contents page, well structured presentation, references etc.) shall be submitted.

BCA 605: SOFTWARE DEVELOPMENT LAB II (Main Project)

The project topic shall be chosen from areas of current day interest using latest packages/ languages running on appropriate platforms, so that the student can be trained to meet the requirements of the Industry. A project report shall be submitted in hard bound complete in all aspects. For internal evaluation, the progress of the student shall be systematically assessed through various stages of evaluation at periodic intervals