



St. PETER'S UNIVERSITY

St. Peter's Institute of Higher Education and Research

(Declared Under Section 3 of the UGC Act, 1956)

AVADI, CHENNAI – 600 054

TAMIL NADU

M.Sc. (COMPUTER SCIENCE)

Code No. - 421

(Effective From 2009 – 2010)

(Distance Education)

Regulations and Syllabi

(I & II Year)

St. PETER'S INSTITUTE OF DISTANCE EDUCATION

Recognized by Distance Education Council and

Joint Committee of UGC – AICTE - DEC, New Delhi

(Ref. F. No. DEC/SPU/CHN/TN/Recog/09/14 dated 02.04.2009 and

Ref.F.No.DEC/Recog/2009/3169 dated 09.09.2009)

St. PETER'S UNIVERSITY

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Chennai – 600 054.

Code No. – 421

M.Sc. (COMPUTER SCIENCE)

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Regulations and Syllabi

(Effective from 2009 – 2010)

- 1. Eligibility:** Candidates who have passed B.Sc. Examination with Computer Science as a major subject or BCA or any degree with Mathematics in +2 of the university or an examination of other University recognized as equivalent thereto, are eligible for admission to Two Year M.Sc. Programme in Computer Science.
- 2. Duration:** Two Years.
- 3. Medium:** English is the medium of instruction and examination.
- 4. Methodology:** The methodology of distance education includes the supply of self-instructional study materials in print format and in CD, face-to-face instruction for theory and practicals for a limited period during week ends and on holidays, provision of virtual class in phased manner, dissemination of information over e-mail, Student - Support Service at various Centres of the University, Continuous Assessment and End Assessment conducted by the University at various parts of India.
- 5. Weightage for Continuous and End Assessment:** There is no weightage for Continuous Assessment unless the ratio is specifically mentioned in the scheme of Examinations. The End Assessment (EA) has 100% weightage.
- 6. Credit System:** Credit system be followed with 36 credits for each Year and each credit is equivalent to 25 hours of effective study provided in the Time Table of the formal system.

7. Scheme of Examinations

First Year

Code No.	Course Title	Credit	Marks	
			EA	Total
Theory				
109PCST01	Design and analysis of Algorithms	5	100	100
109PCST02	Advanced Java Programming	5	100	100
109PCST03	Computer networks and network security	5	100	100
109PCST04	Distributed Database system	4	100	100
109PCST05	Mobile computing	5	100	100
109PCST06	Data mining and Data warehousing	4	100	100
109PCSP01	Advanced Java Programming Lab Record	4	90 10	100
109PCSP02	RDBMS Lab Record	4	90 10	100
	TOTAL	36	800	800

Second Year

Code No.	Course Title	Credit	Marks	
			EA	Total
Theory				
209PCST01	Network Programming	6	100	100
209PCST02	XML and Web services	7	100	100
209PCST03	Artificial Intelligence and expert systems	7	100	100
209PCST04	Free Open Source Software	6	100	100
209PCSP01	Network Programming Lab Record	5	90 10	100
209PCSP02	XML and Web services lab Record	5	90 10	100
	TOTAL	36	600	600

8. Passing Requirements: The minimum pass mark (raw score) be 50% in End Assessment.

9. Grading System: Grading System on a 10 Point Scale be followed with 1 mark = 0.1 and the conversion of the Grade point as given below.

$$\begin{aligned}\text{Overall Grade Point Average (OGPA)} &= \frac{\text{Sum of Weighted Grade Points}}{\text{Total Credits}} \\ &= \frac{\sum (EA)C}{\sum C}\end{aligned}$$

10. The Overall Grade: The Overall Grade and Classification of all successful candidates be arrived at from the Overall Grade Point Average as stipulated in the following conversion Table.

Grade	Over all Grade Point Average(OGPA)	Over all weighted Average marks	Classification
0	9.0 to 10.0	90 to 100	First Class
A	8.0 to 8.9	80 to 89	First Class
B	7.0 to 7.9	70 to 79	First Class
C	6.0 to 6.9	60 to 69	First Class
D	5.0 to 5.9	50 to 59	Second Class
F	0.0 to 4.9	0 to 49	Reappearance

The Grade Sheets of successful candidates provide particulars such as (1) Overall weighted Average Marks, and (2) Overall Grade.

11. Pattern of the Question Paper: The question paper for End Assessment will be set for three hours and for the maximum of 100 marks with following divisions and details.

Part A: 10 questions (with equal distribution to all units in the syllabus). Each question carries 2 marks.

Part B: 5 questions with either or type (with equal distribution to all units in the syllabus).
Each question carries 16 marks.

The total marks scored by the candidates will be calculated to the maximum prescribed in the Regulations.

12. Syllabus

UNIT I

Introduction - Definition of Algorithm – pseudocode conventions – recursive algorithms – time and space complexity –big-“oh” notation – practical complexities – randomized algorithms – repeated element – primality testing - Divide and Conquer: General Method - Finding maximum and minimum – merge sort.

UNIT II

Divide and conquer contd. – Quicksort, Selection, Strassen's matrix multiplication – Greedy Method: General Method –knapsack problem - Tree vertex splitting - Job sequencing with dead lines – optimal storage on tapes.

UNIT III

Dynamic Programming: General Method - multistage graphs – all pairs shortest paths – single source shortest paths - String Editing – 0/1 knapsack. Search techniques for graphs – DFS-BFS-connected components – biconnected components.

UNIT IV

Back Tracking: General Method – 8-queens - Sum of subsets - Graph Coloring – Hamiltonian cycles. Branch and Bound: General Method - Traveling Salesperson problem

UNIT V

P & NP problems - NP-complete problems - Approximation algorithms for NP-hard problems - Traveling salesman problem - Knapsack problem.

Text Book

1. M E. Horowitz, S. Sahni and S. Rajasekaran, 1999, Computer Algorithms, Galgotia, New Delhi.

Reference Books:

1. G. Brassard and P. Bratley, 1997, Fundamentals of Algorithms, PHI, New Delhi.
2. A.V. Aho, J.E. Hopcroft, J.D. Ullmann, 1974, The design and analysis of Computer Algorithms, Addison Wesley, Boston.
3. S.E.Goodman and S.T.Hedetniemi, 1977, Introduction to the Design and Analysis of algorithms, Tata McGraw Hill Int. Edn, New Delhi.

109PCST02 - ADVANCED JAVA PROGRAMMING

UNIT I

Servlet overview – the Java web server – your first servlet – servlet chaining – server side includes- Session management – security – HTML forms – using JDBC in servlets – applet to servlet communication.

UNIT II

Java Beans: The software component assembly model- The java beans development kit- developing beans – notable beans – using infobus - Glasgow developments - Application Builder tool- JAR files-Introspection-Bound Properties-Persistence-customizers - java beans API

UNIT III

EJB: EJB architecture- EJB requirements – design and implementation – EJB session beans- EJB entity beans-EJB Clients – deployment tips, tricks and traps for building distributed and other systems – implementation and future directions of EJB-Variable in perl- perl control structures and operators – functions and scope

UNIT IV

RMI – Overview – Developing applications with RMI:Declaring & Implementing remote interfaces-stubs & skeletons,Registering remote objects,writing RMI clients –Pushing data from RMI Servlet – RMI over Inter-ORB Protocol

UNIT V

JSP –Introduction JSP-Examining MVC and JSP –JSP scripting elements & directives-Working with variables scopes-Error Pages - using Java Beans in JSP Working with Java Mail-Understanding Protocols in Javamail-Components-Javamail API-Integrating into J2EE-Understanding Java Messaging Services-Transactions.

Text Books:

1. J. McGovern,R. Adatia,Y. Fain, 2003, J2EE 1.4 Bible, Wiley-dreamtech India Pvt. Ltd, New Delhi
2. H. Schildt, 2002, Java 2 Complete Reference, 5th Edition, Tata McGraw-Hill, New Delhi.

Reference books:

1. K. Moss, 1999, Java Servlets, Second edition, Tata McGraw Hill, New Delhi.
2. D. R.Callaway, 1999, Inside Servlets, Addison Wesley, Boston
3. Joseph O'Neil, 1998, Java Beans from the Ground Up, Tata McGraw Hill, New Delhi.
4. TomValesky, Enterprise JavaBeans, Addison Wesley.

109PCST03 - COMPUTER NETWORKS & NETWORK SECURITY

UNIT I

Data communication-components-protocols and standards –like configuration-topologies-Transmission mode-Categories of network-OSI model-TCP/IP protocol Model –Application Protocol and TCP/IP utilities –Error detection and correction.

UNIT II

Encoding and Decoding techniques-Transmission media- Performance – Channelization-FDMA-TDMA-CDMA- Peer to peer protocol and TCP/IP utilities-ARQ protocols-Other adaptation function-Data link controls

UNIT III

LAN standards- Ethernet and IEEE802.3 LAN standards-Token Ring and IEEE802.5 Standards –FDDI- Wireless LAN and IEEE 802.11 Standards-LAN bridges –Packet Network Topology-Routing and packet networks-Shortest path algorithm.

UNIT IV

Advance network architecture-IP forwarding Architecture-Overlay Models-MPLS-RVSP-Differentiated services –Security Protocols –Security and Cryptographic Algorithm-Security Protocols Cryptography Algorithms

UNIT V

Configuring Apache – Installing Apache software – configuring the Apache server – understanding an Ltpd. Conf File – Web server security – Managing your web server – Network Security – Security planning – user Authentication – Application security – Security Monitoring – Access control – Encryption – Firewalls.

Reference Books

1. Communication Network- Fundamental Concepts and key Architecture by Leon Garcia and Widjaja.
2. Data Communication and Networking Behrouz A. Forouzan –Second Edition
3. Craig Hunt, "TCP / IP Network Administration", 3rd Edition, O'Reilly Networking, 2002.

109PCST04 - DISTRIBUTED DATABASE SYSTEMS

UNIT - I

Features of Distributed versus Centralized Databases – Why Distributed Databases – Distributed Database Management Systems (DDBMSs)- Review of Databases – Review of Computer Networks-Levels of Distribution Transparency- Reference Architecture for Distributed Databases – Types of Data Fragmentation – Distribution Transparency for read-only Applications – Distribution transparency for Update Applications – Distributed Database Access Primitives – Integrity Constraints in Distributed Databases - A Framework for Distributed Database Design – The Design of Database Fragmentation – The Allocation of Fragments.

UNIT -II

Equivalence Transformations for Queries – Transforming Global Queries into Fragment Queries – Distributed Grouping and Aggregate Function Evaluation – Parametric Queries -Optimization of Access Strategies - A Framework for Query Optimization – Join Queries – General Queries. A Framework for Transaction Management – Supporting Atomicity of Distributed Transactions – Concurrency Control for Distributed Transactions – Architectural Aspects of Distributed Transactions

UNIT - III

Foundations of Distributed Concurrency Control – Distributed Deadlocks – Concurrency Control Based on Timestamps – Optimistic Methods for Distributed Concurrency Control - Reliability – Basic Concepts Nonblocking Commitment Protocols – Reliability and Concurrency Control – Determining a Consistent View of the Network – Detection and Resolution of Inconsistency – Checkpoints and Cold Restart - Distributed Database Administration – Catalog Management in Distributed Databases – Authorization and Protection.

UNIT - IV

Distributed object database management systems – Fundamental object concepts and Models – Object – Abstract Data Types – Composition (Aggregation) – Class – Collection – Subtyping and Inheritance. – Object Distribution Design – Horizontal Class Partitioning – Vertical Class Partitioning – Path Partitioning – Class Partitioning Algorithms – Allocation – Replication – Alternative Client / Server Architectures – Cache Consistency – Object Identifier Management – Pointer Switching Object Migration – Distributed Object Storage – Object Query Processor Architectures – Query Processing Issues – Query Execution – Correctness Criteria – Transaction Models and Object Structures – Transactions Management in Object DBMSs – Transactions as Objects – Conclusion – Bibliographic Notes – Exercises.

UNIT - V

Parallel Database Systems – Database Server Approach – Database Servers and Distributed Databases – Parallel System Architectures – Objectives – Functional Aspects – Parallel Data Processing – Parallel Query Optimization – Data Placement – Query Parallelism – Parallel Execution Problems – Initialization – Interferences and Convoy Effect – Load Balancing – Parallel Execution for Hierarchical Architecture – Problem Formulation – Basic Concepts – Load Balancing Strategy – Performance Evaluation – Conclusion – Bibliographic Notes – Exercises.

Text Book

1. Stefano Ceri, Giuseppe Pelagatti, Distributed Databases Principles & Systems, McGraw-Hill.
2. M.Tamer Ozsu, Patrick Valduriez, Distributed database systems, 2nd Edition, Prentice Hall of India, New Delhi.

109PCST05 - MOBILE COMPUTING

UNIT - I

Introduction - Mobile and Wireless Devices – Simplified Reference Model – Need for Mobile Computing –Wireless Transmissions –Multiplexing – Spread Spectrum and Cellular Systems- Medium Access Control – Comparisons.

UNIT -II

Telecommunication Systems – GSM – Architecture – Sessions –Protocols – Hand Over and Security – UMTS and IMT – 2000 – Satellite Systems: Basics- Routing- Localization- Handover- Broadcast Systems: Overview – Cyclic Repetition of Data- Digital Audio Broadcasting – Digital Video Broadcasting

UNIT - III

Wireless LAN: Infrared Vs Radio Transmission – Infrastructure Networks- Ad hoc Networks-IEEE 802.11 – HIPERLAN – Bluetooth- Wireless ATM: Working Group- Services- Reference Model – Functions – Radio Access Layer – Handover- Location Management- Addressing Mobile Quality of Service- Access Point Control Protocol

UNIT - IV

Mobile IP : Goals – Assumptions and Requirement – Entities – IP packet Delivery- Agent Advertisement and Discovery – Registration – Tunneling and Encapsulation – Optimization –Reverse Tunneling – IPv6 – DHCP- Ad hoc Networks– Routing Strategies.

UNIT - V

Mobile transport layer - Congestion Control – Implication of TCP Improvement – Mobility – Indirect – Snooping – Mobile – Traditional TCP- Indirect TCP- Snooping TCP- Mobile TCP- Fast retransmit/ Fast Recovery-Transmission/ Timeout Freezing – Selective Retransmission- Transaction oriented TCP - TCP over wireless – Performance. Architecture – Datagram Protocol- Transport Layer Security- Transaction Protocol- Session Protocol- Application Environment-Wireless Telephony Application

Text Books:

1. J. Schiller, 2003, Mobile Communications, 2nd edition, Pearson Education, Delhi.

Reference Books:

1. Hansmann, Merk, Nicklous, Stober, 2004, Principles of Mobile Computing, 2nd Edition, Springer (India).
2. Pahlavan, Krishnamurthy, 2003, Principle of wireless Networks: A unified Approach, Pearson Education, Delhi.
3. Martyn Mallick, 2004, Mobile and Wireless Design Essentials, Wiley Dreamtech India Pvt. Ltd., New Delhi.
4. W.Stallings, 2004, Wireless Communications and Networks, 2nd Edition, Pearson Education, Delhi.

109PCST06 - DATA MINING AND DATA WAREHOUSING

UNIT - I

Introduction: Data Mining tasks – Data Mining versus Knowledge Discovery in Data bases – Relational databases – Data warehouses – Transactional databases – Object oriented databases – Spatial databases – Temporal databases – Text and Multimedia databases – Heterogeneous databases - Mining Issues – Metrics – Social implications of Data mining.

UNIT - II

Data Preprocessing: Why Preprocess the data – Data cleaning – Data Integration – Data Transformation – Data Reduction – Data Discretization.

UNIT – III

Data Mining Techniques: Association Rule Mining – The Apriori Algorithm – Multilevel Association Rules – Multidimensional Association Rules – Constraint Based Association Mining.

UNIT - IV

Classification and Prediction: Issues regarding Classification and Prediction – Decision Tree induction – Bayesian Classification – Back Propagation – Classification Methods – Prediction – Classifiers accuracy.

UNIT - V

Clustering Techniques: cluster Analysis – Clustering Methods – Hierarchical Methods – Density Based Methods – Outlier Analysis – Introduction to Advanced Topics: Web Mining , Spatial Mining and Temporal Mining.

Text Book:

1. J. Han and M. Kamber , 2001, Data Mining: Concepts and Techniques, Morgan Kaufmann, .New Delhi.

Reference Books

1. M. H.Dunham, 2003, Data Mining : Introductory and Advanced Topics , Pearson Education, Delhi.
2. Paulraj Ponnaiah, 2001, Data Warehousing Fundamentals, Wiley Publishers.
3. S.N. Sivananda and S. Sumathi, 2006, Data Mining, Thomsan Learning, Chennai.

PRACTICALS

109PCSP01 - ADVANCED JAVA PROGRAMMING LAB

LIST OF EXPERIMENTS

1. Program to illustrate the use of overloading and overriding.
2. Program to implement the concept of Interfaces and packages.
3. Generate the program using exceptions handling mechanism.
4. Program to achieve Inter thread communication and deadlock avoidance.
5. Implement the file operations.
6. Program using Applets.
7. Program using JDBC.
8. Program using JNI concepts.
9. Program to illustrate the use of Remote Method Invocation.
10. Program using Servlets.

109PCSP02 - RDBMS LAB

LIST OF EXPERIMENTS

1. Execute a single line and group functions for a table.
2. Execute DCL and TCL commands.
3. Create and manipulate various DB objects for a table.
4. Create views partitions and locks for a particular DB.
5. Write PL/SQL procedure for an application using exception handling.
6. Write PL/SQL procedure for an application using cursors.
7. Write DBMS program to prepare reports for an application using functions.
8. Write PL/SQL block for transaction operations of a typical application using triggers.
9. Write a PL/SQL block for transaction operations of a typical application using package.
10. Design and develop an application using any front end and back end tool (make use of ER diagram and DFD).

Typical Application- Banking, Electricity Billing, Library Operation, Pay roll, Insurance, Inventory, etc.

YEAR – II

209PCST01 - NETWORK PROGRAMMIG

UNIT I

Overview of ActiveX Scripting – Java Scripting- Stand-Alone Scripts- ActiveX Controls- Creating ActiveX Controls.

UNIT II

ActiveX Documents- ActiveX Document Architecture- Creating ActiveX Documents.

UNIT III

URL Monikers- Hyperlinking- Hyperlink Interface- Working with URL Monikers- Overview of ISAPI- ISAPI Extension- ISAPI Filter.

UNIT IV - QUEUING MODELS

Designing IIS Applications - Building IIS Applications- Building Data Driven DHTML Applications.

UNIT V - FORMAL LANGUAGES & FINITE AUTOMATA

ActiveX Documents- Technology – Migration Wizard- Modifying Code- Launching and Testing Document- Testing the DLL.

TEXT BOOKS:

1. **John Paul Muller – Visual C++ 5 from the GroundUp- Tata McGraw Hill Edition – 1998 (For first three units).**
2. **Noel Jerke – Visual Basic 6 (The Complete Reference) – Tata McGraw Hill Edition –1999(For fourth and fifth units).**

209PCST02 - XML WEB SERVICES

UNIT I

Role Of XML – XML and The Web – XML Language Basics – SOAP – Web Services – Revolutions Of XML – Service Oriented Architecture (SOA).

UNIT II

XML – Name Spaces – Structuring With Schemas and DTD – Presentation Techniques – Transformation – XML Infrastructure.

UNIT III

Overview Of SOAP – HTTP – XML-RPC – SOAP: Protocol – Message Structure – Intermediaries – Actors – Design Patterns And Faults – SOAP With Attachments.

UNIT IV

Overview – Architecture – Key Technologies - UDDI – WSDL – ebXML – SOAP And Web Services In E-Com – Overview Of .NET And J2EE.

UNIT V

Security Overview – Canonicalization – XML Security Framework – XML Encryption – XML Digital Signature – XKMS Structure – Guidelines For Signing XML Documents – XML In Practice.

TEXT BOOKS:

1. Frank. P. Coyle, XML, Web Services And The Data Revolution, Pearson Education, 2002.

REFERENCE BOOKS:

1. Ramesh Nagappan , Robert Skoczylas and Rima Patel Sriganesh, " Developing Java Web Services", Wiley Publishing Inc., 2004.
2. Sandeep Chatterjee, James Webber, "Developing Enterprise Web Services", Pearson Education, 2004.
3. McGovern, et al., "Java Web Services Architecture", Morgan Kaufmann Publishers,2005.

209PCST03 - ARTIFICIAL INTELLIGENCE & EXPERT SYSTEM

UNIT - I

Knowledge: General Concepts:

Introduction, Definition and Importance of Knowledge, Knowledge-Based Systems, Representation of Knowledge, Knowledge Organization, Knowledge Manipulation, Acquisition of Knowledge.

UNIT-II

LISP and Other AI Programming Languages: Introduction to LISP : Syntax and Numeric Function, Basic List Manipulation Functions in LISP, Functions, Predicates and Conditionals, Input, Output and Local Variables, Iteration and Recursion, Property Lists and Arrays, Miscellaneous Topics, PROLOG and Other AI Programming Languages.

UNIT-III

Knowledge Representation: Introduction, Syntax and Semantics for Prepositional logic, Syntax and Semantics for FOPL, Properties of Wffs, Conversion to Clausal Form, Inference Rules, The Resolution Principle, No deductive Inference Methods, Representations Using Rules. Dealing with Inconsistencies and Uncertainties: Introduction, Truth Maintenance Systems, Default Reasoning and the Closed World Assumption, Predicate Completion and Circumscription, Modal and Temporal Logics.

UNIT-IV

Probabilistic Reasoning : Introduction, Bayesian Probabilistic Inference, Possible World Representations, Dumpster-Shafer Theory, Ad-Hoc Methods.

Search and Control Strategies: Introduction, Preliminary Concepts, Examples of Search Problems, Uninformed or Blind Search, Informed Search, Searching And-Or Graphs.

Matching Techniques: Introduction, Structures Used in Matching, Measures for Matching, Matching Like Patterns, Partial Matching.

UNIT-V

Knowledge Organization and Management: Introduction, Indexing and Retrieval Techniques, Integrating Knowledge in Memory, Memory Organization Systems. Expert Systems Architectures: Introduction, Rule Based System Architecture, Non-Production System Architecture, Dealing with uncertainty, Knowledge Acquisition and Validation, Knowledge System Building Tools.

Text Book:

1. Dan W. Patterson., "Introduction to Artificial Intelligence and Expert Systems", PHI, New Delhi, 2001.

Reference Books:

1. E. Rich & K. Knight "Artificial Intelligence". , 2nd Ed. TMH, New Delhi
2. P.H. Winston, "Artificial Intelligence", 3rd Ed. Addison Wesley, New Delhi

209PCST04 - FREE OPEN SOURCE SOFTWARE

UNIT-I INTRODUCTION

Overview of Free/Open Source Software-Definition of FOSS & GNU, History of GNU/Linux and the Free Software Movement , Advantages of Free Software and GNU/Linux, FOSS usage , trends and Potential-global and Indian.GNU/Linux OS installation-detect hardware, configure disk partitions & file systems and install a GNU/Linux distribution ; Basic shell commands - logging in, listing files, editing files, copying/moving files, viewing file contents, changing file modes and permissions, process management ; User and group management, file ownerships and permissions, PAM authentication ;Introduction to common system configuration files & log files ; Configuring networking, basics of TCP/IP networking and routing, connecting to the Internet (through dialup, DSL, Ethernet, leased line).

UNIT -II CONFIGURING ADDITIONAL HARDWARE

Configuring additional hardware - sound cards, displays & display cards, network cards, modems, USB drives, CD writers ; Understanding the OS boot up process ; Performing every day tasks using gnu/Linux --accessing the Internet, playing music, editing documents and spreadsheets, sending and receiving email, copy files from disks and over the network, playing games, writing CDs ; X Window system configuration and utilities - configure X windows, detect display devices ; Installing software - from source code as well as using binary packages. Setting up email servers-- using postfix (SMTP services), courier (IMAP & POP3 services), squirrel mail (web mail services) ; Setting up web servers - using apache (HTTP services), php (server-side scripting), perl (CGI support) ; Setting up file services - using samba (file and authentication services for windows networks), using NFS (file services for gnu/Linux / Unix networks) ; Setting up proxy services -- using squid (http / ftp / https proxy services) ; Setting up printer services - using CUPS (print spooler), foomatic (printer database)

UNIT-III SETTING UP A FIREWALL

Setting up a firewall - Using net filter and ip tables; Using the GNU Compiler Collection --GNU compiler tools ; the C preprocessor (cpp), the C compiler (gcc) and the C++ compiler (g++), assembler (gas) ; Understanding build systems - constructing make files and using make, using autoconf and autogen to automatically generate make files tailored for different development environments ; Using source code versioning and management tools - using CVS to manage source code revisions, patch & diff.

UNIT- IV FOSS LIBRARIES

Understanding the GNU Libc libraries and linker - linking against object archives (.a libraries) and dynamic shared object libraries (.so libraries), generating statically linked binaries and libraries, generating dynamically linked libraries ; Using the GNU debugging tools -- gdb to debug programs, graphical debuggers like ddd, memory debugging / profiling libraries mpatrol and valgrind ; Review of common programming practices and guidelines for GNU/Linux and FOSS ; Introduction to Bash, sed & awk scripting. Basics of the X Windows server architecture.

UNIT-V FOSS PROGRAMMING

Qt Programming ; Gtk+ Programming ; Python Programming ; Programming GUI applications with localisation support.

Text Book :

1. Introduction to Linux: Installation and Programming N. B. Venkateshwarlu (Ed); B S Publishers; 2005. (An NRCFOSS Publication)

Reference Books :

1. Running Linux, Fourth Edition, Matt Welsh, Matthias Kalle Dalheimer, Terry Dawson
2. Lar Kaufman, O'Reilly Publishers, December 2002, ISBN: 0-596-00272-6.
3. Linux Cookbook, First Edition, Carla Schroder, O'Reilly Cookbooks Series, November 2004, ISBN: 0-596-00640-3.

On-line materials

1. Open Sources: Voices from the Open Source Revolution, First Edition, January 1999, ISBN: 1-56592-582-3. URL: <http://www.oreilly.com/catalog/opensources/book/toc.html>
2. The Linux Cookbook: Tips and Techniques for Everyday Use, First Edition, Michael Stutz, 2001. URL: http://dsl.org/cookbook/cookbook_toc.html
3. The Linux System Administrators' Guide, Lars Wirzenius, Joanna Oja, Stephen Stafford, and Alex Weeks, December 2003. URL: <http://www.tldp.org/guides.html>
4. Using GCC, Richard Stallman et al. URL: <http://www.gnu.org/doc/using.html>
5. An Introduction to GCC, Brian Gough. URL: <http://www.network-theory.co.uk/docs/gccintro/>

PRACTICALS

209PCSP01 - NETWORK PROGRAMMING LAB

LIST OF EXPERIMENTS

Working with Java Scripts.

1. Creating ActiveX Controls.
2. OLE Server.
3. OLE Container.
4. Working with URL Monikers.
5. Creating an ISAPI Extension.
6. Creating an ISAPI Filter.
7. Building IIS Application.
8. Data- Driven DHTML Application.
9. ActiveX Documents.

209PCSP02 - XML AND WEB SERVICES LAB

LIST OF EXPERIMENTS

1. Create an XML document to store an address book.
2. Create an XML document to store information about books and create the DTD files.
3. Create an XML schema for the book's XML document from exercise 2.
4. Create an XML document to store resumes for a job web site and create the DTD file
5. Present the book's XML document using cascading style sheets (CSS).
6. Write an XSLT program to extract book titles, authors, publications, book rating from the book's XML document and use formatting.
7. Use Microsoft DOM to navigate and extract information from the book's XML document.
8. Use Microsoft DSO to connect HTML form or VB form to the book's XML document and display the information.
9. Create a web service for temperature conversion with appropriate client program.
10. Create a web service for currency conversion (at five currencies) with appropriate client program.

CONTROLLER OF EXAMINATIONS