ShriVaishnavVidyapeethVishwavidyalaya

B.Tech.(CSE with specialization in Enterprise System in association with RedHat)

Choice Based Credit System (CBCS)-2018-19

SEMESTER - III

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTIT401	-	**Discrete Structure**	**3**	**1**	**-**	**4**	**60**	**20**	**20**	**-**	**-**

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

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COURSE OBJECTIVES

The student will have ability to:

1. To provide the fundamentals of formal techniques for solve the problems in computational domain and algorithm development
2. Apply appropriate mathematical and statistical concepts and operations to interpret data and to solve problems
3. Formulate and evaluate possible solutions to problems, and select and defend the chosen solutions
4. Construct graphs and charts, interpret them, and draw appropriate conclusions

COURSE OUTCOMES

Upon completion of the subject, students will be able to:

1. Understand the notion of mathematical thinking, mathematical proofs, and algorithmic thinking, and be able to apply them in problem solving.
2. Understand the basics of discrete probability and number theory, and be able to apply the methods from these subjects in problem solving.
3. Be able to use effectively algebraic techniques to analyze basic discrete structures and algorithms.
4. Understand asymptotic notation, its significance, and be able to use it to analyze asymptotic performance for some basic algorithmic examples.
5. Understand some basic properties of graphs and related discrete structures, and be able to relate these to practical examples.

SYLLABUS

UNIT–I

Set Theory: Definition Of Sets, Venn Diagrams, Complements, Cartesian Products, Power Sets, Counting Principle, Cardinality and Countability (Countable And Uncountable Sets), Proofs of Some General Identities on Sets, Pigeonhole Principle. Relation: Definition, Types of Relation, Composition

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of Relations, Domain and Range of a Relation, Pictorial Representation of Relation, Properties of Relation, Partial Ordering Relation. Function: Definition and Types of Function, Composition of Functions, Recursively Defined Functions.

UNIT-II

Propositional Logic: Proposition Logic, Basic Logic, Logical Connectives, Truth Tables, Tautologies, Contradiction, Normal Forms (Conjunctive and Disjunctive), Modus Ponens and Modus Tollens, Validity, Predicate Logic, Universal and Existential Quantification. Notion of Proof: Proof by Implication, Converse, Inverse, Contrapositive, Negation, and Contradiction, Direct Proof, Proof by Using Truth Table, Proof by Counter Example

UNIT-III

Graph Theory: Terminology Graph Representation Graph Isomorphism; Connectedness; Various Graph Properties; Euler and Hamiltonian Graph; Shortest Paths Algorithms. Trees: Terminology, Tree Traversals; Prefix Codes, Spanning Trees, Minimum Spanning Trees.

UNIT-IV

Algebraic Structure: Binary Composition and its Properties Definition of Algebraic Structure; Groyas Semi Group, Monoid Groups, Abelian Group, Properties of Groups, Permutation Groups, Sub Group, Cyclic Group, Rings and Fields (Definition and Standard Results).

UNIT-V

Posets, Hasse Diagram And Lattices: Introduction, Ordered Set, Hasse Diagram of Partially, Ordered Set, Isomorphic Ordered Set, Well Ordered Set, Properties of Lattices, Bounded and Complemented Lattices. Combinatorics: Introduction, Permutation and Combination, Binomial Theorem, Multinomial Coefficients Recurrence Relation and Generating Function: Introduction to Recurrence Relation and Recursive Algorithms, Linear Recurrence Relations with Constant Coefficients, Homogeneous Solutions, Particular Solutions, Total Solutions, Generating Functions, Solution by Method of Generating Functions.

TEXT BOOKS:

1. C.L.Liu, "Elements of Discrete Mathematics",4th Edition, Tata McGraw-Hill, 2012.
2. Kenneth H. Rosen, "Discrete Mathematics and its applications", 7th Edition,Tata McGraw-Hill, 2012.
3. V. Krishnamurthy, "Combinatories:Theory and Applications", 2nd Edition,East-West Press, 2008.
4. Seymour Lipschutz, M.Lipson, "Discrete Mathemataics",3rd Edition, Tata McGraw Hill, 2009.

REFERENCES:

1. Trembley, J.P &Manohar; "Discrete Mathematical Structure with Application CS", Tata McGraw Hill.
2. Bisht, "Discrete Mathematics",Oxford University Press, 2015.
3. Biswal,"Discrete Mathematics & Graph Theory",3rd Edition, PHI, 2011.

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							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTCS302		**Data Communication**	**3**	**1**	**-**	**4**	**60**	**20**	**20**	**-**	**-**

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;
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COURSE OBJECTIVES

The student will have ability to:
1. To understand the concepts of data communications.
2. To be familiar with the Transmission media and Tools.
3. To study the functions of OSI layers.
4. To learn about IEEE standards in computer networking.
5. To get familiarized with different protocols and network components.

COURSE OUTCOMES

Upon completion of the subject, students will be able to:
1. Understand the Process and functions of data communications
2. Understand Transmission media and Tools
3. Understand the functions of OSI layers
4. Understand IEEE standards in computer networking
5. Understand different protocols and network components

SYLLABUS

UNIT–I

Introduction: Data Communication Components, Types of Connections, Transmission Modes, Network Devices, Topologies, Protocols and Standards, OSI Model, Transmission Media, Bandwidth, Bit Rate, Bit Length, Baseband and Broadband Transmission, Attenuation, Distortion, Noise, Throughout, Delay and Jitter.

UNIT–II

Data Encoding: Unipolar, Polar, Bipolar, Line and Block Codes. Multiplexing: Introduction and History, FDM, TDM, WDM, Synchronous and Statistical TDM.Synchronous and Asynchronous transmission, Serial and Parallel Transmission.

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UNIT–III

Error Detection & Correction: Correction, Introduction–Block Coding–Hamming Distance, CRC, Flow Control and Error Control, Stop and Wait, Error Detection and Error Go Back– N ARQ, Selective Repeat ARQ, Sliding Window, Piggybacking, Random Access, CSMA/CD,CDMA/CA

UNIT–I

Network Switching Techniques: Circuit, Message, Packet and Hybrid Switching Techniques.X.25, ISDN.Logical Addressing, Ipv4, Ipv6, Address Mapping, ARP, RARP, BOOTP and DHCP, User Datagram Protocol, Transmission Control Protocol, SCTP.

UNIT–V:

Application Layer Protocols: Domain Name Service Protocol, File Transfer Protocol, TELNET, WWW and Hyper Text Transfer Protocol, Simple Network Management Protocol, Simple Mail Transfer Protocol, Post Office Protocol v3.

TEXT BOOKS:

1. Behrouz A. Forouzan, “Data communication and Networking”, FourthEdition,Tata McGraw Hill, 2011.

REFERENCES:

1. Larry L.Peterson, Peter S. Davie, “Computer Networks”, Fifth Edition,Elsevier, 2012.
2. William Stallings, “Data and Computer Communication”, Eighth Edition, Pearson Education,2007.
3. James F. Kurose, Keith W. Ross, “Computer Networking: A Top–Down Approach Featuring theInternet”, Pearson Education, 2005.

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							THEORY		PRACTICAL		
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BTIT305	-	Analysis & Design of Algorithms	3	1	2	5	60	20	20	30	20

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COURSE OBJECTIVES

The student will have ability to:

1. Ability to analyze asymptotic runtime complexity of algorithms including formulating recurrence relations. How to develop efficient algorithms for simple computational tasks and reasoning about the correctness of them?
2. The emphasis is on choosing appropriate data structures and designing correct and efficient algorithms to operate on these data structures.
3. Write rigorous correctness proofs for algorithms.
4. Synthesize efficient algorithms in common engineering design situations.

COURSE OUTCOMES

Upon completion of the subject, students will be able to:

1. Define the basic concepts of algorithms and analyze the performance of algorithms.
2. Discuss various algorithm design techniques for developing algorithms.
3. Discuss various searching, sorting and graph traversal algorithms.
4. Understand NP completeness and identify different NP complete problems.
5. Discuss various advanced topics on algorithms.

SYLLABUS

UNIT-I:
Algorithms Designing: Algorithms, Analyzing Algorithms, Asymptotic Notations, Heap and Heap Sort,Brief Review of Graphs, Sets and Disjoint Set Union, Sorting and Searching Algorithms and their Analysis in terms of Space and Time Complexity. Divide and Conquer: General Method, Binary Search, Merge Sort, Quick Sort, Selection Sort, Strassen's Matrix Multiplication Algorithms.

UNIT-II:
Greedy Method: General Method, Knapsack Problem, Job Sequencing with Deadlines, Minimum-Cost Spanning Trees, Single Source Shortest Paths.

UNIT-III:
Dynamic Programming: General Method, Optimal Binary Search Trees, O/1 Knapsack, Traveling Salesperson Problem, All Pairs Shortest Paths.

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UNIT-IV:

Backtracking: General Method, 8-Queens Problem, Graph Coloring, Hamiltonian Cycles, Sum of Subsets. Branch and Bound: Method, O/1 Knapsack Problem, Traveling Salesperson Problem, Efficiency Considerations, Techniques for Algebraic Problems, Some Lower Bounds on Parallel Computations.

UNIT-V:

NP Hard and NP Complete Problems: Basic Concepts, Cook's Theorem, NP Hard Graph and NP Scheduling Problems, Some Simplified NP Hard Problems.

REFERENCES:

1. Ellis Horowitz and SartajSahni, "Fundamental of Computer Algorithms", 2nd Edition, Galgotia Publication, 2001.
2. Thomas H Cormen, Charles E Leiserson and Ronald L Rivest "Introduction to Algorithms",3rd Edition, MIT Press. 2009.
3. Donal E Knuth, "Fundamentals of Algorithms: The Art of Computer Programming" Vol l,3rd Edition, Pearson Educatio, 1997.
4. Goodman, S.E. &Hedetnieni,"Introduction to Design and Analysis of Algorithm", Tata McGraw Hill, 1977.
5. S. Dasgupta, C. H. Papadimitriou, and U. V. Vazirani,"Algorithms",Tata McGraw Hill, 2006.
6. J.E Hopcroft, J.D Ullman, "Design and analysis of algorithms" TMH Publication.
7. Michael T Goodrich and RobartoTamassia "Algorithm Design", Wiely India.

LIST OF EXPERIMENTS:-

1. Write a program for Iterative and Recursive Binary Search.
2. Write a program for Merge Sort.
3. Write a program for Quick Sort.
4. Write a program for Strassen's Matrix Multiplication.
5. Write a program for minimum spanning trees using Kruskal's algorithm.
6. Write a program for minimum spanning trees using Prim's algorithm.
7. Write a program for single sources shortest path algorithm.
8. Write a program for Floyd-Warshal algorithm.
9. Write a program for traveling salesman problem.
10. Write a program for Hamiltonian cycle problem.

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COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY		PRACTICAL		
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BTCS303		Principles of Programming Languages	3	-	2	4	60	20	20	30	20

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;
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COURSE OBJECTIVES

The student will have ability to:

1. To improve the background for choosing appropriate programming languages for certain classes of programming problems.
2. To be able in principle to program in an imperative (or procedural), an object-oriented, a functional, and a logical programming language.
3. To understand the significance of an implementation of a programming language in a compiler or interpreter
4. To Increase the ability to learn new programming languages
5. To Increase the capacity to express programming concepts and choose among alternative ways to express things.

COURSE OUTCOMES

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes:

1. Students will gain insight and develop understanding to the underlying principles and concepts of programming languages. Also Gain an overview of programming language translation process.
2. Students will be able to competent with analyzing programming language design issues related to data types, expressions and control structures.
3. Students will be able to describe the concept of sub-programming with the help of Functions. Also develop understanding with the parameter passing techniques and concept of function overloading.
4. Students will be able to analyze various memory management techniques as well as apply various concepts of object oriented programming.

Students will be able to develop understanding with the exception handling concept and gain knowledge of logical and functional programming.

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SYLLABUS

UNIT–I

Preliminary Concepts: Reasons for Studying, Concepts of Programming Languages, Programming Domains,Language Evaluation Criteria, Influences on Language Design, Language Categories, Programming Paradigms – Imperative, Object Oriented, Functional Programming , Logic Programming. Programming Language Implementation – Compilation and Virtual Machines, Programming Environments.

UNIT–II

Data Types: Introduction, Primitive, Character, User Defined, Array, Associative, Record, Union, Pointer and Reference Types, Design and Implementation Uses Related to these Types. Names, Variable, Concept of Binding, Type Checking, Strong Typing, Type Compatibility, Named Constants, Variable Initialization.

UNIT–III

Expressions and Statements: Arithmetic Relational and Boolean Expressions, Short Circuit Evaluation Mixed Mode Assignment, Assignment Statements, Control Structures – Statement Level, Compound Statements, Selection, Iteration, Unconditional Statements, Guarded Commands.

UNIT–IV

Subprograms and Blocks: Fundamentals of Sub-Programs, Scope and Lifetime of Variable, Static and Dynamic Scope, Design Issues of Subprograms and Operations, Local Referencing Environments, Parameter Passing Methods, Overloaded Sub-Programs, Generic Sub-Programs, Design Issues for Functions Overloading and Overloaded Operators, Co-Routines.

UNIT–V

Abstract Data Types: Abstractions and Encapsulation, Introductions to Data Abstraction, Static and Stack Based Storage Management. Heap Based Storage Management. Garbage Collection.
Object Oriented Programming in Smalltalk, C++, Java, C#, Php, Perl. Concurrency: Subprogram Level Concurrency, Semaphores, Monitors, Massage Passing, Java Threads, C# Threads.

TEXT BOOKS:

1. Robert .W. Sebesta “Concepts of Programming Languages”, 10th Edition, Pearson Education,2008.
2. D. A. Watt, “Programming Language Design Concepts, Wiley dreamtech,rp-2007.
3. Louden and Lambart,“Programming Languages: Principles and Practices”, 3rd Edition, Cengage Learning, 2011

REFERENCES:

1.Gabbrielli and Martini “Programming Languages: Principles and Paradigms., Springer, 2010.
2. Peter Sestoft,“Programming Language Concepts”, Springer, 2017.
3. A.B. Tucker, R.E. Noonan, “Programming Languages”, 2nd Edition, Tata McGraw Hill.
4. Terrance W Pratt, "Programming Languages: Design and Implementation" Pearson Education.

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LIST OF EXPERIMENTS:

1. Type compatibility rules of a C compiler.
2. Compare time efficiency to run for matrix multiplication with and without subscript range checking.
3. Investigate the safety of enumeration types. Perform at-least 5 operations to determine what incorrect or silly things are legal.
4. Calculate time efficiency for large number of references to two dimensional array between subscripting and pointer arithmetic
5. Illustrates the order of evaluation of expressions used as actual parameters to a method.
6. Consider the following programming problem: The values of three integer variables—first, second, and third—must be placed in the three variables max, mid, and min, with the obvious meanings, without using arrays or user-defined or predefined subprograms. Write two solutions to this problem, one that uses nested selections and one that does not. Compare the complexity and expected reliability of the two.
7. Produces different behavior depending on whether pass-by-reference or pass-by-value-result is used in its parameter passing.
8. Write a program in some language that has both static and stack dynamic local variables in subprograms. Create six large (at least 100 * 100) matrices in the subprogram—three static and three stack dynamic. Fill two of the static matrices and two of the stack-dynamic matrices with random numbers in the range of 1 to 100. The code in the subprogram must perform a large number of matrix multiplication operations on the static matrices and time the process. Then it must repeat this with the stack-dynamic matrices. Compare and explain the results.
9. Write an abstract data type for complex numbers, including operations for addition, subtraction, multiplication, division, extraction of each of the parts of a complex number, and construction of a complex number from two floating-point constants, variables, or expressions.
10. Define semaphores in Ada and use them to provide both cooperation and competition synchronization in the shared-buffer example
11. Prepare a case study on C and C++ for Readability, Writability and. Reliability.

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Choice Based Credit System (CBCS)-2018-19

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							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTIT309	CS	Introduction to Core Java	2	-	2	3	60	20	20	30	20

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;
*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

COURSE OBJECTIVES

The student will have ability to:
1. Understand Java Environment for application development.
2. Understand Programing using Object Oriented Technology,
3. Develop computer program to solve specific problems with high performance.
4. Create debug and run java standalone applications.

COURSE OUTCOMES

Upon completion of the subject, students will be able to:
1. Design new applications using object oriented methodologies.
2. Explore various system libraries
3. Analyze and improve performance of applications.
4. Design Data base connectivity program for simple problems

SYLLABUS

UNIT–I

The Java Environment: Basic History of Java and its Features, JVM, JRE and JDK, its Libraries and Functionalities, Why Java? Installing Java, Java Classes and Objects, Variables and Data Types Conditional and Looping Constructs,Arrays.

UNIT–II

The Java Language: Constructors, Inheritance, Packages and Interfaces, Access Specifier, Enumerations, Auto boxing, and Annotations (Metadata) Garbagecollection,Nested Classes, Inner Classes

UNIT–III

Performance: Understanding Threads, Needs of Multi-Threaded Programming ,Thread Life Cycle, Thread Priorities ,Synchronizing Threads, Inter Communication of Threads, The Idea Behind Exception , Exceptions and Errors ,Types of Exception, Control Flow in Exceptions, JVM Reaction to Exceptions , Use of Try, Catch, Finally, Throw, Throws in Exception Handling, In-Built and User Defined Exceptions,Checked and Un Checked Exceptions, Generics, Lambda Expressions

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UNIT–IV

The Java Library: String Handling, Exploring Java.Lang, Java.Util – The Collection Framework, Exploring Java.IO, Exploring Java.NIO

UNIT–V

Database Connectivity with JDBC: Introduction to JDBC, JDBC Drivers & Architecture, CRUD Operation using JDBC

TEXT BOOKS:

5. Herbert Schildt, "The Complete Reference Java", Ninth Edition, McGraw Hill, 2014
6. Bert Bates, Kathy Sierra, "Head First Java", 2nd Edition, O' Reilly, 2005
7. Cay S Horstman and Gary Cornell, "Core Java", Vol I & II, Pearson Education, 2013
8. Kishore Sharan, "Beginning Java 8 Language Features", Apress, 2014
9. E. Balagurusamy, "Programming with java A Primer", Fourth Edition, Tata McGraw Hill, 2009.
10. Sharanam Shah, "Core Java 8 for Beginners", Shroff Publisher, 2015.

LIST OF EXPERIMENTS:

1. Write a program to show concept of Class in Java?
2. Write a program showing Type Casting
3. Write a program showing Different type of inheritance
4. Write a program showing Different types of Polymorphism
5. Write a program showing Encapsulation
6. Write a program showing Abstraction
7. Write a Multithreaded program
8. Write a program showing Checked and Unchecked Exception
9. Write a program showing Database connectivity.
10. Write a program showing Simple database Operation (CRUD)

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Choice Based Credit System (CBCS)-2018-19

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RH254	**-**	**RedHat Administration-III**	**-**	**-**	**4**	**2**	**-**	**-**	**-**	**-**	**100**

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Course Objectives:

The objective of the course is to :

1. Understand Deploying and Managing Network Servers Running Caching Domain Name Service (DNS),
2. Understand and Deploying MariaDB, Apache HTTPD, Postfix SMTP Nullclients, Network File Sharing with Network File System (NFS) and Server Message Block (SMB)
3. Deploying and Managing iSCSI initiators and Targets, Advanced Networking and Firewalld Configurations, and the use of Bash Shell Scripting to help Automate, Configure, and Troubleshoot the System.

Course Outcomes:

Students should be able to demonstrate the following skills:

1. Enterprise Linux Advanced Administration, including Service and Daemon Control, Network Configuration and Troubleshooting,
2. Manage NFS and SAMBA File Server Configuration,
3. Apache HTTP Web Server Management, MariaDB SQL Database Configuration,
4. Postfix SMTP Configuration, DNS Troubleshooting, and Bash Scripting.

Syllabus:

- Control services and daemons
    - Review how to manage services and the boot-up process using systemctl
- Manage IPv6 networking
    - Configure and troubleshoot basic Ipv6 networking on Red Hat Enterprise Linux systems
- Configure link aggregation and bridging
    - Configure and troubleshoot advanced network interface functionality including bonding, teaming, and local software bridges
- Control network port security
    - Permit and reject access to network services using advanced SELinux and firewalld filtering techniques
- Manage DNS for servers

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  - Set and verify correct DNS records for systems and configure secure DNS caching
- Configure email delivery
  - Relay all email sent by the system to an SMTP gateway for central delivery
- Provide block-based storage
  - Provide and use networked iSCSI block devices as remote disks
- Provide file-based storage
  - Provide NFS exports and SMB file shares to specific systems and users
- Configure MariaDB databases
  - Provide a MariaDB SQL database for use by programs and database administrators
- Provide Apache HTTPD web service
  - Configure Apache HTTPD to provide Transport Layer Security (TLS)-enabled websites and virtual hosts
- Write Bash scripts
  - Write simple shell scripts using Bash
- Bash conditionals and control structures
  - Use Bash conditionals and other control structures to write more sophisticated shell commands and scripts
- Configure the shell environment
  - Customize Bash startup and use environment variables, Bash aliases, and Bash functions
- Comprehensive review
  - Practice and demonstrate knowledge and skills learned in Red Hat System Administration III

Text Books:

1. SA3 REDHAT SYSTEMADMINISTRATION III Student Workbook(Release en-2-20150427) By Wander Boessenkol, Bruce Wolfe, Scott McBrien, George Hacker, Chen Chang

List of Practical:

1. Control services and daemons.
2. Manage networking.
3. Configure link aggregation, bridging, teaming, and bonding.
4. Configure filters with firewalls.
5. Permit and reject access to network services using SELinux.
6. Manage DNS servers.
7. Configure SMTP email delivery.
8. Provide iSCSI block storage.
9. Configure NFS and SAMBA file-based storage.
10. Configure MariaDB SQL database.
11. Aconfigure Apache HTTPD with TLS-enabled virtual hosts.
12. Write simple bash automation scripts.

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BTIT307		Web Development Lab-I(HTML & XML)	-	-	4	2	-	-	-	60	40

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Course Objectives:

1. Students will use a variety of design software to organize, create, publish, and manage a web site.
2. This course also puts emphasis on basic concepts of web design
3. Provide you the conceptual and technological developments in the field of Internet and web designing.
4. Course content includes creating a variety of graphic elements including video, animations, rollover effects, backgrounds, and page images

Course Outcomes:

1. Create an HTML Documents, and establish adequate formatting for presentation purposes.
2. Import, insert and modify images.
3. Insert and manipulate tables.
4. Establish and maintain internal and external link to available resources.
5. Use special effect to make the expressive, evocative documents.
6. Insert and manipulate multi-media objects.

Syllabus:

UNIT I

Introduction to HTML: What is HTML, HTML Documents, SGML, Basic structure of an HTML document, creating an HTML document, Headers tags, Body tags, Paragraphs formatting, Text Elements, Tag Elements, Special Character elements, Image tags, HTML Table tags and lists: Numbered list, Non- Numbered lists, Definition lists, Anchor tag, Name tag, Hyperlinks – FTP/HTTP/HTTPS, Links with images and buttons, Links to send email messages, Text fonts and styles, background colors/images, Marquee Behavior, Forms related tags. (Action, method, name, inputetc.)

UNIT II

HTML5: Introduction of HTML5, Browser suppots, Migration from HTML4 to HTML5, New Elements in HTML5, HTML5 different parts layout of a web page, HTML5 Graphics: Canvas,

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SVG, HTML Media Tags: Inserting audio files, Inserting video files, Screen control attributes, Media control attributes, HTML Object.

UNIT III

CSS: Introduction of CSS, CSS Syntax CSS Id & Class. CSS Styling: styling Backgrounds, styling Text, styling Fonts, styling Links, styling Lists, styling Tables. CSS Box Model: Border, Outline, Margin, Padding. CSS Advanced: Grouping/Nesting, Dimension, Display, Positioning, Floating, Align, Pseudo-class, Pseudo-element, Navigation Bar, Image Gallery, Image capacity, Image Sprites, Media Types, and Attribute Selectors.

UNIT IV

XML: Introduction of XML, Cross scripting of XML, XML as intermediate language, Difference between XML and HTML, XML DOM, Tree, Syntax, Elements, Attributes, Namespaces, XPath, XML DTD, Applications, XQuery, XML Schema, XML Parser, XHTML: Introduction of XHTML, XHTML rules over the HTML, conversation HTML to XHTML.

UNIT V

Java Script: Introduction to client side scripting, Server side scripting, Java Script Syntax, Variables and Functions, Operators: JavaScript Arithmetic Operators, JavaScript Assignment Operators, JavaScript Popup Boxes, JavaScript Window, Events and Objects, JavaScript Function Call, Validation in webpages, Introduction of AJAX.

Text Books:

1. Jennifer Niederst Robbins. Learning Web Design, Fifth Edition, O'Reilly Media, Inc, May 2018.
2. Frain and Ben. Responsive Web Design with HTML5 and CSS3, Second Edition, 2015.
3. Nicholas c.Zakas. Java Script for Web Developers, Third edition, 2012.
4. George Q. Huang, K. L Mak. Internet Applications in Product Design and Manufacturing, ISBN: 3540434658, 2003 edition, springer, 2012.

References:-

1. Steven M. Schafer, "HTML, XHTML, and CSS Bible", Fifth Edition, WileyIndia, 2010.
2. John Duckett,"Beginning HTML, XHTML, CSS, and JavaScript ",WileyIndia, 2010.
3. Ian Pouncey, Richard York, "Beginning CSS: Cascading Style Sheets for Web Design",3rd edition, Wiley India, 2011.
4. Achyut S. Godbole, Atul Kahate, Web Technologies, ISBN: 9781259062681,3rd edition, TMH, 2013.

List of Practicals:

1. Design a Web Page, Insert an image on to the web page such that image is of height 300 and width 300 pixels. The image should have an ALT text in it.
2. Create a Web page that holds a bulleted list of the names of your friends. Make sure that the bullets are in plain circle.

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3. Create a Frame which would hold both the web page that was created earlier. The frame should be split row-wise into equal halves.
4. Create a Web Page to display the marks you got in all subjects of last semester using table.
5. Create a Form having two boxes with labels as First Name and Last Name. The User should not be allowed to enter the names directly in the text boxes. The input has to be given in the prompt box and then entered values should be given in the textboxes.
6. Create a Web Page that has a button in the center of the page. Using mouse events change the Message in the statusbar.
7. Design a Web page that accepts Username and Password. Opens a new window when the password corresponds to a particular value is set by the developer Design a Web page that consists of 2 text boxes. When the page is first loaded set the focus to the first textbox. The user should not be allowed to leave the box unless enters a value in it.
8. To convert the HTML code to XHTML code.
9. To study the XML tree.
10. To study of Dreamweaver Tool.
11. To study of a Flash Animation Tool.