Shri Vaishnav Vidyapeeth Vishwavidyalaya

B. Tech., B. Tech. + M. Tech. and B. Tech. + MBA (Information Technology)

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;
*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall 2exceed more than 10 marks

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 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;

*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. 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.

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–IV

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", Fourth Edition, 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 the Internet", Pearson Education, 2005.

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							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment *	END SEM University Exam	Teachers Assessment *
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.

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 Sartaj Sahni, "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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							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTCS502	UG	**Operating System**	**2**	**1**	**2**	**4**	**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. To learn the fundamentals of Operating Systems.
2. To study the mechanisms of Operating System to handle processes and threads and their communication.
3. To gain knowledge of process management concepts that includes architecture, Mutual exclusion algorithms, deadlock detection and recovery algorithms.
4. To learn the mechanisms involved in memory management in Operating System.
5. To know the components and management aspects of disc scheduling.

COURSE OUTCOMES

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

1. To describe the detail structure of Operating System.
2. To design and Implement Process management Techniques in Operating System.
3. To calculate CPU Scheduling criteria.
4. To understand The Memory Management of Operating System.
5. To elaborate Disc Scheduling.

SYLLABUS

UNIT–I

Introduction to Operating System: Introduction and Need of operating system, Layered Architecture/Logical Structure of Operating system, Type of OS(Multiprogramming , Time Sharing, Real Time ,Networked, Distributed, Clustered, Hand Held), Operating system as Resource Manager and Virtual Machine, OS Services, BIOS, System Calls/Monitor Calls, Firmware- BIOS, Boot Strap Loader.

Threads- processes versus threads, threading, concepts, models, kernel & user level threads, thread usage, benefits, multithreading models.

UNIT–II

Process Management: Process Model, Creation, Termination, States & Transitions, Hierarchy, Context Switching, Process Implementation, Process Control Block, Basic System calls- Linux & Windows.

Basic concepts, classification, CPU and I/O bound, CPU scheduler- short, medium, long-term, dispatcher, scheduling:- preemptive and non-preemptive, Static and Dynamic Priority

Criteria/Goals/Performance Metrics, scheduling algorithms- FCFS, SJFS, shortest remaining time, Round robin, Priority scheduling, multilevel queue scheduling, multilevel feedback queue scheduling.

UNIT–III

Interprocess Communication- Introduction to Message Passing, Race Condition, Critical Section Problem, Peterson's Solution, Semaphore, Classical Problems of Synchronization Classical IPC Problems: Reader's & Writer Problem, Dinning Philosopher Problem, Sleeping Barber Problem etc. **Deadlock-** System model, Resource types, Deadlock Problem, Deadlock Characterization, Methods for Deadlock Handling, Deadlock Prevention, Deadlock Avoidance: Banker's algorithm, Deadlock Detection, Recovery from Deadlock.

UNIT–IV

Memory Management- concepts, functions, logical and physical address space, address binding, degree of multiprogramming, swapping, static & dynamic loading- creating a load module, loading, static & dynamic linking, shared libraries, memory allocation schemes- first fit, next fit, best fit, worst fit and quick fit. Free space management- bitmap, link list/free list.

Virtual Memory- concept, virtual address space, paging scheme, pure segmentation and segmentation with paging scheme hardware support and implementation details, memory fragmentation, demand paging ,working set model, page fault frequency, thrashing, page replacement algorithms- optimal, FIFO,LRU; Bleady's anomaly; TLB (translation look aside buffer).

UNIT–V

File Management- Concepts, Naming, Attributes, Operations, Types, Structure, File Organization & Access (Sequential, Direct ,Index Sequential) Methods, Memory Mapped Files, Directory Structures One Level, Two Level, Hierarchical/Tree, Acyclic Graph, General Graph, File System Mounting, File Sharing, Path Name, Directory Operations, Overview Of File System in Linux & Windows.

Input/output Subsystems- Concepts, Functions/Goals, Input/Output devices- Block And Character, Spooling, Disk Structure & Operation, Disk Attachment, Disk Storage Capacity, Disk Scheduling Algorithm- FCFS, SSTF, Scan Scheduling, C-Scan Schedule.

TEXT BOOKS:

1. Abraham Silberschatz,"Operating system concepts",10th Edition,John Willey & Sons. INC, 2018
2. Andrew S.Tannanbaum, "Modern operating system", 4th Edition,Pearson Education, 2014
3. Dhananjay M. Dhamdhere, "Operating Systems:A concept Based Approach", 3rd Edition TMH, 2017,
4. SibsankarHaldar, Alex AlagarsamyAravind,"Operating System", 8th Edition, Pearson Education India,, 2010

REFERENCES:

1. Achyut S Godbole,"Operating System",3rd TMH,2017.
2. William Stalling, "operating system" 8th, Pearson Education, ,2014.
3. Vijay Shukla, "Operating System", 3rd, Kataria&Sons ,2013.
4. Singhal&Shivratri,"Advanced Concept in Operating Systems", 1st , TataMc-Graw Hill Education, edition 2017.

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SEMESTER III

LIST OF EXPERIMENTS:

1. Implement and update the BIOS settings of your PC.
2. If there are 5 printers are connected in a system each process to print will take different time to complete, and CPU will give a fixed time to each process after that deadline next process will enter in CPU. If a problem not completed in a given slot then that process will be re-enter as per the FCFS, on rotation basis? Apply the scheduling on this?
3. Implement Non Preemptive Priority CPU Scheduling.
4. Implement Non Preemptive Shortest Job first CPU Scheduling.
5. If there are 5 different resources like 3 printer,2 scanner are connected to a system each taking different time to complete the task. Which scheduling is best and gives best performance of CPU?
6. Implement the scheduling for that where CPU give chance to complete those process first which comes first?
7. Implement Round-Robin CPU scheduling.
8. Write a program to implement Semaphore.
9. Find the solution for the situation where 5 faculties are sitting in a round table. There are 4 ball pens are placed on this table. At a time only one pen can be picked by one faculty to writing work. What will happen if all picked the pen for writing simultaneously?
10. Find the solution for dentist checkup clinic where only one chair and one dentist is available for treatment. And having n chairs to waiting for patient.
    - If there is no patient, then the doctor sleeps in his own chair.
    - When a patient arrives, he has to wake up the doctor.
    - If there are many patients and the doctor is doing treatment of him, then the remaining patients either wait if there are empty chairs in the waiting room or they leave if no chairs are empty.
11. Write a program for Memory Management Algorithms e.g. First Fit, Best Fit, Worst Fit.
12. Demonstrate Virtual memory Techniques like, LRU, FIFO etc.
13. Implement Shortest Seek Time First Disk Scheduling Algorithm.
14. Implement Scan Scheduling Disk Scheduling Algorithm.
15. Implement Circular Scan Disk Scheduling Algorithm.
16. Implement Look Disk Scheduling Algorithm.

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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 *
BTIT309	-	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) Garbage collection, 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

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:

1. Herbert Schildt, "The Complete Reference Java", Ninth Edition, McGraw Hill, 2014
2. Bert Bates, Kathy Sierra, "Head First Java", 2nd Edition, O' Reilly, 2005
3. Cay S Horstman and Gary Cornell, "Core Java", Vol I & II, Pearson Education, 2013
4. Kishore Sharan, "Beginning Java 8 Language Features", Apress, 2014
5. E. Balagurusamy, "Programming with java A Primer", Fourth Edition, Tata McGraw Hill, 2009.
6. 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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							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTCS610		Technical Presentation Skills	-	-	4	2	-	-	-	-	100

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.

GUIDELINES:

During the Presentation Session each student is expected to prepare and present a topic on engineering/technology, for duration of about 15-20 minutes. Each student is expected to present at least twice during the semester and the student is evaluated based on that. At the end of the semester, he / she can submit a report on his / her topic of presentation and marks are given based on the report.

COURSE OBJECTIVES

The student will have ability to:
1. To encourage the students to study advanced engineering developments.
2. To prepare and present technical reports.
3. To prepare technical material using audiovisual materials.
4. To encourage the students to use various teaching aids such as over head projectors, PowerPoint presentation and demonstrative models.

COURSE CONTENTS:

Note taking from reference material , Precise writing , Slide preparation and oral presentation principles, Written presentation of technical material , Preparation of Bibliography , Basics of Official Correspondence , Preparation of curriculum vitae , Students should be asked to prepare and give presentation during the semester.

COURSE OUTCOMES

Upon completion of the subject, students will be able to:
1. Ability to review, prepare and present technological developments.
2. Ability to face the placement interviews.
3. Ability to effectively communicate technical material in print.
4. Ability to present technical material orally with confidence and poise.
5. Ability to present technical material using audiovisual materials.
6. Ability to communicate technical material to a variety of audiences, from members of the building and engineering trades and medical fields to government representatives and the general public.
7. Ability to work well in teams.

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TEXT BOOKS:

1. The Chicago Manual of Style, 13th Edition, Prentice Hall of India 1989.
2. Gowers Ernest, "The Complete Plan in Words" Penguin, 1973.
3. Menzel D.H., Jones H.M, Boyd, LG., "Writing a Technical Paper". McGraw Hill, 1961.
4. Strunk, W., & White E.B., "The Elements of Style", 3rd Edition , McMillan, 1979.

REFERENCES:

1. Turbian K.L., "A Manual for Writers of Term Papers, Thesis and dissertations" Univ of Chicago Press, 1973.
2. IEEE Transactions on "Written and Oral Communication" has many papers.

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							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTIT407	-	**Web Development Lab-II (PHP/JSP)**	-	-	4	2	-	-	-	30	20

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

The course content should be taught and implemented with the aim to develop required skills in the students so that they are able to acquire following competencies:

1. Develop interactive web based application using PHP/JSP and MySQL.
2. Effective use of format and design for print documents
3. Design dynamic websites that meet specified needs and interests.

COURSE OUTCOMES:

The theory should be taught and practical should be carried out in such a manner that students are able to acquire different learning out comes in cognitive, psychomotor and affective domain to Demonstrate following course outcomes.

1. Create small programs using basic PHP concepts.
2. Apply In-Built and Create User defined functions in PHP programming.
3. Design and develop a Web site using form controls for presenting web based content.
4. Debug the Programs by applying concepts and error handling techniques of PHP.
5. Create dynamic Website/ Web based Applications, using PHP, MySQL database.
6. Create dynamic Website/ Web based Applications, using JSP, MySQL database.

SYLLABUS

UNIT-I

Introduction to PHP: Identify Relationship Between Apache, Mysql and PHP, Steps to Install and Test Web Server, Configure Apache to Use PHP, Create Simple PHP Page Using PHP Structure and Syntax, Use of PHP Variables, Data Types and PHP Operators, Apply Control Structures in Programming, Steps to Create User Defined Functions

UNIT-II

Working with in Built Functions: Apply Various Inbuilt variable (Gettype, Settype, Isset, Strval, Floatval, Intval,Print_R), String (Chr, Ord, Strtolower, Strtoupeer, Strlen, Ltrim, Rtrim, Trim, Substr, Strcmp, Strcasecmp, Ctrops, Strops, Stristr, Str_Replace, Strrev, Echo, Print), Math (Abs, Ceil, Floor, Round, Fmod, Min, Max, Pow, Sqrt, Rand), Date (Date, Getdate, Setdate, Checkdate, Time, Mktime), Array (Count, List, In_Array, Current, Next, Previous, End, Each, Sort, Array_Merge, Array_Reverse), File Functions(Fopen, Fread, Fwrite, Fclose) in Programming .

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UNIT-III:
Working With Data And Forms: Steps to Create an Input Form (Text Fields, Text Areas, Check Boxes, Radio Buttons, List Boxes, Password Controls, Hidden Controls, Image Maps, File Uploads, Buttons), Steps to Use Using PHP$_Get And $_Post, $_Request Method for a Given Application, Combining HTML and PHP Codes Together on Single Page, Redirecting the User.

UNIT-IV:
Session, Cookies And Error Handling: Use Cookie to Store and Retrieve Data, Use Query string to Transfer Data, Create Session Variable and Handle Session, Starting and Destroying Session Working with Session Variables, Passing Session IDs, Handle Runtime Errors Through Exception Handling, Error Types in PHP.
Database Connectivity Using MYSQL: Concepts and Installation Of Mysql, Mysql Structure and Syntax, Types of Mysql Tables and Storage Engines, Mysql Commands, Integration of PHP with Mysql, Connection to the Mysql Database, Creating And Deleting Mysql Database Using PHP, Updating, Inserting, Deleting Records in the Mysql Database, Hosting Website (Using "C" Panel, Using FileZilla Software)

UNIT-V:
Java Server Pages Basics: Integrating Scripts in JSP, JSP Objects and Components, Configuration and Troubleshooting, JSP: Request and Response Objects, Retrieving the Contents of An HTML Form, Retrieving a Query String, Working with Beans, Cookies, Creating and Reading Cookies. Using Application Objects and Event Handling.

REFERENCES:

1. W. Jason Gilmore, "Beginning PHP and MySQL", 4th Edition, Apress, 2010
2. Steven Holzner, "PHP: The Complete Reference", Tata McGraw-Hill, 2008
3. Robin Nixon, "Learning PHP, MySQL, JavaScript, CSS & HTML5", Third Edition, O'reilly Media , 2014
4. Julie C. Meloni, "Teach yourself PHP, MySQL and Apache All in one", 5th Edition, Pearson Education, 2012
5. Phil Hanna, "JSP 2.0: The Complete Reference", Tata McGraw Hill, 2011.

List of Experiments.
1. Write a PHP script to display Welcome message.
2. Write a PHP script to demonstrate arithmetic operators, comparison operator, and logical operator.
3. Write PHP Script to print Fibonacci series.
4. Write PHP script to demonstrate Variable function
5. Write PHP script to demonstrate string function.
6. Write PHP script to demonstrate Array functions.
7. Create student registration form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page.
8. Write two different PHP script to demonstrate passing variables through a URL.
9. Write PHP script to demonstrate passing variables with cookies.
10. Write an example of Error-handling using exceptions.
11. Write a PHP script to connect MySQL server from your website.
12. Write a program to read customer information like cust_no, cust_name, Item_purchase, and

mob_no, from customer table and display all these information in table format on output screen.
13. Write a program to read employee information like emp_no, emp_name, designation and salary from EMP table and display all this information using table format.
14. Create a dynamic web site using PHP and MySQL.
15. Write a program for JSP scriptlet tag that prints the user name
16. Write a program for JSP expression tag that prints current time
17. Write a program for JSP declaration tag that declares method
18. Write a program for JSP for request and response implicit object
19. Write a program for JSP for session implicit object
20. Write a program for JSP for exception implicit object
21. Write a program for JSP for Simple example of java bean class
22. Write a program for JSP for JSP Action Tags