SEMESTER - III

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
							THEORY			PRACTICAL	
BTIT401	UG	**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 on 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 course, 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,

Chairperson
Board of Studies
(Computer Science & Engineering,
Information Technology & Computer Applications)
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

Joint Registrar
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

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.

Chairperson
Board of Studies
(Computer Science & Engineering,
Information Technology & Computer Applications)
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

Joint Registrar
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTCS302	UG	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 on 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 course, 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", 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, PearsonEducation,2007.
3. James F. Kurose, Keith W. Ross, "Computer Networking: A Top–Down Approach Featuring theInternet", Pearson Education,2005.

Chairperson
Board of Studies
(Computer Science & Engineering,
Information Technology & Computer Applications)
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

Joint Registrar
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

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*
BTIT305	UG	**Analysis & Design of Algorithms**	3	1	2	5	60	20	20	30	20

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;
*Teacher Assessment shall be based on 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. 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 ofthem?
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 course, 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,

Chairperson
Board of Studies
(Computer Science & Engineering,
Information Technology & Computer Applications)
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

Joint Registrar
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

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 1,3rd 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" TMHPublication.
7. Michael T Goodrich and RobartoTamassia "Algorithm Design", Wiely India.

LIST OF EXPERIMENTS:-
1. Write a program for Iterative and Recursive BinarySearch.
2. Write a program for MergeSort.
3. Write a program for QuickSort.
4. Write a program for Strassen's MatrixMultiplication.
5. Write a program for minimum spanning trees using Kruskal'salgorithm.
6. Write a program for minimum spanning trees using Prim'salgorithm.
7. Write a program for single sources shortest pathalgorithm.
8. Write a program for Floyd-Warshalalgorithm.
9. Write a program for traveling salesmanproblem.
10. Write a program for Hamiltonian cycleproblem.

Chairperson
Board of Studies
(Computer Science & Engineering,
Information Technology & Computer Applications)
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

Joint Registrar
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

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*
BTCS303	UG	**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;
*Teacher Assessment shall be based on 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 improve the background for choosing appropriate programming languages for certain classes of programmingproblems.
2. To be able in principle to program in an imperative (or procedural), an object-oriented, a functional, and a logical programminglanguage.
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 programminglanguages
5. To Increase the capacity to express programming concepts and choose among alternative ways to expressthings.

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 translationprocess.
2. Students will be able to competent with analyzing programming language design issues related to data types, expressions and controlstructures.
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 functionoverloading.
4. Students will be able to analyze various memory management techniques as well as apply various concepts of object orientedprogramming.
5. Students will be able to develop understanding with the exception handling concept and gain knowledge of logical and functionalprogramming.

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, GuardedCommands.

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, PearsonEducation,2008.
2. D. A. Watt, "Programming Language Design Concepts, Wileydreamtech,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 McGrawHill.
4. Terrance W Pratt, "Programming Languages: Design and Implementation" PearsonEducation.

LIST OF EXPERIMENTS:

1. Type compatibility rules of a Ccompiler.
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 arelegal.
4. Calculate time efficiency for large number of references to two dimensional array between subscripting and pointerarithmetic
5. Illustrates the order of evaluation of expressions used as actual parameters to amethod.
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 thetwo.

7. Produces different behavior depending on whether pass-by-reference or pass-by-value-result is used in its parameterpassing.

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 theresults.

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, orexpressions.

10. Define semaphores in Ada and use them to provide both cooperation and competition synchronization in the shared-bufferexample

11. Prepare a case study on C and C++ for Readability, Writability and.Reliability.

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY END SEM University Exam	THEORY Two Term Exam	PRACTICAL Teachers Assessment*	PRACTICAL END SEM University Exam	PRACTICAL Teachers Assessment*
BTIT309	UG	**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 on 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 applicationdevelopment.
2. Understand Programing using Object OrientedTechnology,
3. Develop computer program to solve specific problems with highperformance.
4. Create debug and run java standaloneapplications.

COURSE OUTCOMES
Upon completion of the course, students will be able to:
1. Design new applications using object orientedmethodologies.
2. Explore various systemlibraries
3. Analyze and improve performance ofapplications.
4. Design Data base connectivity program for simpleproblems

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 andUn 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 inJava?
2. Write a program showing TypeCasting
3. Write a program showing Different type ofinheritance
4. Write a program showing Different types ofPolymorphism
5. Write a program showingEncapsulation
6. Write a program showingAbstraction
7. Write a Multithreadedprogram
8. Write a program showing Checked and UncheckedException
9. Write a program showing Databaseconnectivity.
10. Write a program showing Simple database Operation(CRUD)

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTCS610	UG	**Technical Presentation Skills**	-	-	4	2	-	-	-	-	100

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;
*Teacher Assessment shall be based on 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 thereport.

COURSE OBJECTIVES

The student will have ability to:
1. To encourage the students to study advanced engineeringdevelopments.
2. To prepare and present technicalreports.
3. To prepare technical material using audiovisualmaterials.
4. To encourage the students to use various teaching aids such as over head projectors,PowerPoint presentation and demonstrativemodels.

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 course, students will be able to:
1. Ability to review, prepare and present technologicaldevelopments.
2. Ability to face the placementinterviews.
3. Ability to effectively communicate technical material inprint.
4. Ability to present technical material orally with confidence andpoise.
5. Ability to present technical material using audiovisualmaterials.
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 generalpublic.
7. Ability to work well inteams.

Chairperson
Board of Studies
(Computer Science & Engineering,
Information Technology & Computer Applications)
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

Joint Registrar
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

TEXT BOOKS:

1. The Chicago Manual of Style, 13th Edition, Prentice Hall of India1989.
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 manypapers.

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	THEORY			PRACTICAL	
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTIT407	UG	**Web Development Lab-II (PHP/JSP)**	-	-	4	2	-	-	-	30	20

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

COURSE OBJECTIVES:
The course content should be taught and implemented with the aim to develop required skills inthe 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, My SQL database.
6. Create dynamic Website/ Web based Applications, using JSP, My SQL 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 Inbuiltvariable(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 .

UNIT-III:
Working With Data And Forms:Steps to Create an Input Form (Text Fields, Text Areas, Check

Chairperson
Board of Studies
(Computer Science & Engineering,
Information Technology & Computer Applications)
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

Joint Registrar
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Incore

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 Querystring 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 FileZillaSoftware)

UNIT-V:
Java Server Pages Basics:Integrating Scripts in JSP, JSP Objects and Components, Configuration and Troubleshooting,JSP: Request and Response Objects, Retrievingthe Contents of An HTML Form, Retrievinga 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'reillyMedia, 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 McGrawHill,2011.

List of Experiments.

1. Write a PHP script to display Welcomemessage.
2. Write a PHP script to demonstrate arithmetic operators, comparison operator, andlogicaloperator.
3. Write PHP Script to print Fibonacciseries.
4. Write PHP script to demonstrate Variablefunction
5. Write PHP script to demonstrate stringfunction.
6. Write PHP script to demonstrate Arrayfunctions.
7. Create student registration form using text box, check box, radio button, select,submit button. And display user inserted value in new PHPpage.
8. Write two different PHP script to demonstrate passing variables through aURL.
9. Write PHP script to demonstrate passing variables withcookies.
10. Write an example of Error-handling usingexceptions.
11. Write a PHP script to connect MySQL server from yourwebsite.
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 intable format on outputscreen.
13. Write a program to read employee information like emp_no, emp_name, designationand salary from EMP table and display all this information using tableformat.
14. Create a dynamic web site using PHP andMySQL.
15. Write a program for JSP scriptlet tag that prints the username

16. Write a program for JSP expression tag that prints currenttime
17. Write a program for JSP declaration tag that declaresmethod
18. Write a program for JSP for request and response implicitobject
19. Write a program for JSP for session implicitobject
20. Write a program for JSP for exception implicitobject
21. Write a program for JSP for Simple example of java beanclass
22. Write a program for JSP for JSP ActionTags

Chairperson
Board of Studies
(Computer Science & Engineering,
Information Technology & Computer Applications)
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

Joint Registrar
Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore