"Education for Knowledge, Science, and Culture"
- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Autonomous)

KOLHAPUR (AUTONOMOUS)

Department of BCA

B. C. A. Part II (CC & AECC)

(स्वायत्त) कोल्हापूर

SYLLABUS

Introduced from June 2022-23

BCA-II (Sem-III)

Course Code	Title of Paper	Credit	Internal	External	Total
CC BCA-1405C	Object Oriented Programming with C++	4	30	70	100
CC BCA-1406C	Software Engineering	4	30	70	100
CC BCA-1407C	Relational Database Management	4	30	70	100
CC BCA-1408C	Entrepreneurship Development	4	30	70	100
AECC BCA-1409C	Mathematics	4	30	70	100
CCL BCA-1410C	Lab Course-V Based on C++	2	-	50	50
CCL BCA-1411C	Lab Course VI based on Relational Database Management	2	-	50	50
BCA-SEC-I	SEC-I-PHP Part-I	2	50		
		26	150	450	600

BCA-II (Sem-IV)

Course Code	Title of Paper	Credit	Internal	External	Total
CC BCA-1412D	Data structure using C++	4	30	70	100
CC BCA-1413D	Advance Web Technology	4	30	70	100
CC BCA-1414D	Principles of Marketing	4	30	70	100
CC BCA-1415D	E- Commerce	4	30	70	100
AECC BCA-1416D	Computer Oriented Statistical Methods	4	30	70	50
CCL BCA-1417D	Lab Course-VII Based on Data Structure and Web Technology	2	-	50	50
CCL BCA-1418D	Mini Project	2	-	50	50
BCA-SEC-II	SEC-II-PHP Part-II	2	50	-	50
AECC	Environmental Studies				
		26	150	450	600

Dissemination of Education for Knowledge, Science and Refined Manners
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Shri Swami Vivekanand Shikshan Sanstha's

Vivekanand College, Kolhapur (Autonomous)

Department of BCA

BCA-II Sem-III

(With effect from June-2022)

Semester	**III**	Total credit	4
Course code	**BCA-1405C**	Credit pattern	L-60, T -100, P-30
Course title	**Object Oriented Programming with C++**		

Course objectives	
1	To learn concepts of Object oriented Programming.
2	To use different techniques of OOP to solve programming problems.

Module	Content	Teaching Hrs
I	**Principles of Objective Oriented Programming** History of OOP, Introduction to Object Oriented Programming, Basic Concepts of Object Oriented Programming, Benefits of Object Oriented Programming, Object Oriented Languages, Difference between C and C++. **Beginning with C++** Tokens, Keywords, Identifiers and Constants, Data Types, Type Compatibility, Variables, Operators in C++, Operator Precedence, Control Structures (Conditional, Unconditional and Looping).	**15**
II	**Functions in C++, Classes & Objects** Concept of Function, main() Function, Inline Functions, Function Overloading, Specifying a Class, Data members and Member Functions, Access Specifiers, Friend Function, Static data Member, Object declaration and Initialization, Arrays of Objects **Constructors & Destructors, Inheritance** Constructors-Definition, Use of Constructors, Types of Constructors (Default, Parameterized, Copy, Dynamic), Destructors-Definition, Use, Inheritance-Definition, Types of Inheritance (Single, Multiple, Multilevel, Hierarchical, Hybrid)	**15**
III	**Pointers, Virtual Functions &Polymorphism** Pointer, Pointer to Object, this pointer, Pointer to Derived Classes, Polymorphism: Meaning, compile Time and Run time polymorphism, Rules for Operator Overloading, Operator Overloading (Unary & Binary)-with member function and friend function.	**15**
IV	**Working with Files** File-Definition, Use, Classes for File Stream Operations, Opening and Closing a File, File Opening Modes, File Pointers, Manipulation of File Pointer(using-seekg,seekp,tellg,tellp), Input Output Operations- get ( ) Put ( ), read ( ) Write ( ).	**15**

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IV	**Software Testing:** Validation and Verification, Black Box testing approach, White Box testing approach, Levels of testing: Unit Testing, Integration Testing, Validation testing, System testing and debugging. Software Maintenance: Software Maintenance Process and its types.	15

Learning Recourses		
1	**Reference Books**	1. Ian Sommerville. Software Engineering, Pearson Education (Addison Wesley), 2. P. Jalote, "An Integrated approach to Software Engineering", Narosa, 1991. 3. Waman S. Jawadekar,"Software Engineering: Principles and Practice", McGraw Hill 4. R. S. Pressman, "Software Engineering – A practitioner's approach", 3rd ed., McGraw Hill Int.Ed., 1992. 5. K.K.Agrawal&Yogesh Singh, "Software Engineering", New Age Publication

Course Outcomes	
1	Compare and chose a process model for a software project development.
2	Identify requirements analyze and prepare models.
3	Prepare the SRS, Design document, Project plan of a given software system.
4	Work as an individual and as part of a multidisciplinary team to develop and deliver quality software.

RDBMS with Oracle

Semester	**III**	Total credit	4
Course code	**BCA-1407C**	Credit pattern	L-60, T -100 marks,P-30
Course title	**RDBMS with Oracle**		

Course objectives	
1	To enable students understand and use RDBMS concepts
2	To learn how to design and create database and to implement data base for application

Module	Content
I	**Relational Database Management System:** 1.1 Concept of RDBMS, Difference between DBMS and RDBMS, Features of RDBMS. 1.2 Introduction of Oracle, Role and responsibilities of DBA. 1.3 RDBMS Terminology- Relation, Tuple, Cardinality, Attribute, Degree, Primary Key, Domain, Codd's Rules 1.4 Relational Model, Functional Dependencies, Normalization and its types.
II	**INTRODUCTION TO SQL:** 2.1 Features of SQL, Data types, 2.2 Classification of SQL Commands – DDL (create, alter, drop), DML (insert, Update, delete), DCL (grant, revoke), TCL (rollback, commit). 2.3 SQL Integrity Constraints-(Primary key, Foreign key, unique key, not null, default, check) 2.4 Select statement with group by and order by clause

Learning Recourses: Reference Books
1. Object Oriented Programming with C++ by E Balagurusami. 2. Object Oriented Programming using C++ books By Yashwant Kanetkar 3. Object Oriented Programming in C++ by Rajesh K Shukla 4. The C++ Programming Language written by BjarneStroustrup. 5. Object Oriented Programming in C++ by Robert Lafore 6. Test Your Skills in Object Oriented Programming with C++ by R S Salaria

Course Outcomes	
1	Understand the features of C++ supporting object oriented programming
2	Understand the relative merits of C++ as an object oriented programming language
3	Understand how to apply the major object-oriented concepts to implement object oriented programs in C++, encapsulation, inheritance and polymorphism
4	Understand advanced features of C++ specifically stream I/O and file handling.

Software Engineering

Semester	**III**	Total credit	4
Course code	**BCA-1406C**	Credit pattern	**L-60, T -100,P-00**
Course title	**Software Engineering**		

Course objectives	
1	The study of this course will help students understand how to manage the development of industrial strength software.
2	Students will learn about various phases of software development and use of various development models for the same.
3	Students will learn concepts of software design, software testing and maintenance.
4	Students will learn about the role of software reliability and quality assurance

Module	Content	Teaching Hrs
I	**Introduction:** Software Engineering approach, Need of engineering aspect for Software Design, SDLC, Software Crisis, Software Process, Process models (Classical Waterfall Model, Build-n- Fix Model, Iterative Waterfall Model, Prototyping Model, Evolutionary Model and Spiral Model)	15
II	**Software Requirement Analysis and Specifications:** Software Requirement Specifications, Need of SRS, Steps for constructing good SRS, Behavioral and Non-Behavioral requirements, Analysis Model	15
III	**Software Design:** Design Concepts & Principle, problem partitioning, abstraction, and top down and bottom up-design, Cohesion & Coupling, How to measure degree of Cohesion and Coupling, Function Oriented Design, DFDs, Structure Chart, Object Oriented Design.	15

	2.5 SQL Operators-arithmetic, relational, Logical, Like, Between, IN operator 2.6 SQL Functions- Arithmetic functions, Conversion Functions, Date function, Aggregate functions, String functions.
III	**JOIN AND SUB QUERIES:** 3.1 Join types - Inner Join, Outer Join, Cross Join and self-Join 3.2 Sub-queries, Multiple sub queries, nesting of sub queries, sub queries in DML commands. 3.3 Correlated queries, Indexes, Sequences. Views-Create View, Drop, View and its Advantages. , Denial of service (DoS), Firewall and proxy server.
IV	**INTRODUCTION TO PL/SQL:** 4.1 Introduction to PL/SQL, Block Structure 4.2 Data types in PL-SQL 4.3 Control Structures-Branching statements, Iterative Control statements. 4.4 Cursors –Concept, Types- Implicit, Explicit, Procedure to create explicit cursors, Cursor Attributes. 4.5 TRIGGERS: Concept and types.

Learning Recourses		
1	Reference Books	1) SQL, PL/SQL: The Programming Language- Ivan Bayross-(BPB) 2) Structured Query Language- by Osbome 3) SQL by Scott Ullman. 4) SQL & PL/SQL Black Book for Oracle by Dr,P.S.Deshpande.

Course Outcomes	
1	Enhance the knowledge and understanding of database analysis and design
2	Enhance programming skills and techniques using SQL and PL/SQL
3	Use the relational Model and how it is supported by SQL and PL/SQL
4	To solve database problems using SQL and PL/SQL by using Cursors and Triggers.

Entrepreneurship Development

Semester	III	Total credit	4
Course code	BCA-1408C	Credit pattern	L-60, T -100,P-00
Course title	**Entrepreneurship Development**		

Course objectives	
1	To impart theoretical knowledge & Entrepreneurship.
2	To develop Entrepreneurship qualities and skills.

Module	Content	Teaching Hrs.	% of syllabus changes
I	**Entrepreneurship:-** Concept, Classification – Functions, Qualities of successful Entrepreneurship. Concept of Entrepreneur and intrapreneur. Entrepreneurship in modern Era.	**15**	

II	**Entrepreneurship Development:-** Concept, objectives, process, problems, measures in Entrepreneurship Development , Role of Entrepreneurship In Economic Development (Theories), Institutional support for Entrepreneurship Development - National Institute for Entrepreneurship and Small Business Development (NIESBD), Small Industry Development Bank of India (SIDBI), District Industry Censes (DIC)	**15**	
III	**Project Management:-** **Company formation, forms of business organization** project- classification of project, Stages of Project Management, Reasons for failure for, Project, Project for Retail stores, Hotel, Hospital, Dairy.	**15**	10%
IV	**Successful Indian Entrepreneurs:-** Ratan Tata, Azim Premji, Narayan Murthy, Anand Mahindra, Kumar Mangalam Birla, Nandan Nilekani.	**15**	

1	Reference Books	1. Dynausic of Entrepreneurship Development - & Management – By vasaut Desai 2. Entrepreneurship Development in India- By C.B.Gupta and N.P.Srinivasan 3. Entrepreneurship Development-By S.S. Khanke 4. Entrepreneurship Development and Project Management-By Dr.DilipSarwate. 5. Entrepreneurship 11th Edition by Robert Hisrich.

Course Outcome	
1	Examine the characteristics of an entrepreneur as well their role in economic development of the country.
2	To facilitate a clear perspective to diagnose and effectively handle human behavior issues in organizations.
3	To know insight into their own behavior in interpersonal and, group, team, situations.
4	On completion of this course students should be able to start their own business

Mathematic Foundation

Semester	III	Total credit	4
Course code	BCA-1409C	Credit pattern	L-60, T -100,P-00
Course title	**Mathematic Foundation**		

Course objectives	
1	Students should understand the impart that individual, group and structures have on their behavior within the organization.
2	They should identify the required behavioral model in the Organizational

Module	Content	Teaching Hrs.
I	**SETS** 1.1 Meaning of a set. 1.2 Methods of describing of a set. 1.2.1 Tabular form 1.2.2 Set builder form 1.3 Types of a set 1.3.1 Finite set, Infinite set, Empty set, Subset, Universal set. 1.3.2 Equal sets, Disjoint sets, Complementary set. 1.4 Operation on Sets 1.4.1 Union of sets 1.4.2 Intersection of sets 1.4.3 Difference of sets. 1.5 De Morgan's Laws (without proof). 1.6 Venn diagram. 1.7 Cartesian product of two sets. 1.8 Idempotent laws, Identity laws, Commutative Laws, Associative laws, Distributive laws, Inverse laws, Domination Laws, Absorption laws, Involution laws. 1.9 Duality. 1.10 Computer Representation of sets and its operations. 1.11 Examples based on above.	**15**
II	**Logic** 2.1 Introduction 2.2 Meaning of Statement (Proposition). 2.3 Simple and compound statements. 2.4 Truth values of a statement. 2.5 Law of excluded middle. 2.6 Logical Operations: Negation, Conjunction, Disjunction, Implication, Double Implication. 2.7 Equivalence of Logical statements. 2.8 Truth Tables and construction of truth tables. 2.9 Converse, Inverse and Contra positive. 2.10 Statement forms: Tautology, Contradiction, Contingency. 2.11 Duality, Laws of logic: Idempotent laws, Commutative laws, Associative laws, Identity laws,Involution laws, Distributive laws, Complement laws, De Morgan's laws. 2.12 Argument: Valid and Invalid arguments. 2.13 Examples based on above.	**15**

III	**Matrices** 3.1 Meaning of a matrix, Order of matrix. 3.2 Types of matrices 3.2.1 Row matrix, Column matrix, Null matrix, Unit matrix 3.2.2 Square Matrix, Diagonal matrix, Scalar matrix, 3.2.3 Symmetric matrix, Skew - symmetric matrix 3.2.4 Transpose of a matrix, 3.3 Definition of Determinants of order 2nd & 3rd and their expansions 3.4 Singular and Non-Singular Matrices 3.5 Algebra of Matrices 3.5.1 Equality of matrices 3.5.2 Scalar Multiplication of matrix 3.5.3 Addition of matrices, Subtraction of matrices 3.5.4 Multiplication of matrices. 3.6 Elementary Row & Column Transformations 3.7 Inverse of Matrix (Using Elementary Transformations) 3.8 Examples based on above.	**15**
IV	**Graph Theory** 4.1 Introduction to Graph 4.2 Kinds of Graph : Simple, Multi and Pseudo Graph 4.3 Digraph 4.4 Weighted Graph 4.5 Degree of Vertex, Isolated Vertex 4.6 Path, Cycle, A-Cycle, 4.7 Types of Graph: Complete, Regular, Bi-Partite, Complete Bi-partite, Isomorphism of Graph 4.8 Matrix Representation of Graph: Adjacency and Incidence Matrix 4.9 Operation on Graph: Union, Intersection, Complement, Product of Graphs, Fusion of Graphs 4.10 Examples based on above.	**15**

Learning Recourses		
1	Reference Books	1. Discrete Mathematics & Structures by Satinder Bal Gupta, *University Science Press* 2. Fundamental Approach to Discrete Mathematics by D. P. Acharjya, Sreekumar, *New Age International Publishers* 3. Discrete Mathematical Structures by Kolman, Busby, Ross, *Pearson Education Asia* 4. Matrices by Shantinarayan, *S. Chand & Co. , New Delhi* 5. Discrete Mathematics by Schaum Series 6. Discrete Mathematics by K D Joshi

Course Outcomes	
1	Ability to apply mathematical logic to solve problems.
2	Understand sets, relations, functions, and discrete structures.
3	Able to use logical notation to define and reason about fundamental mathematical concepts such as sets, relations, and functions.
4	Able to formulate problems and solve recurrence relations.

Object Oriented Programming with C++ Practical

Semester	**III**	Total credit	2
Course code	BCA-1410C	Credit pattern	P-4, T -00,P-50
Course title	**Object Oriented Programming with C++ Practical**		

List of Experiments:

1. WAP to understand the structure of C++ program
2. WAP Simple Program using Class and Object.
3. WAP to find greatest number among the given three numbers using class.
4. WAP to find mean of data members of two classes using friend function.
5. WAP to demonstrate Static data member.
6. WAP to demonstrate Array of Object.
7. WAP using Constructor (with and without Parameter).
8. WAP using Destructor.
9. WAP to demonstrate Types of Inheritance.
10. WAP using Virtual Function.
11. WAP to Overload Unary and Binary Operators with member function and friend function.
12. WAP to Overload Binary Operator with member function and friend function.
13. WAP for file handing- Opening file using Constructor.
14. WAP for file handing- Opening file using open( ) method.
15. WAP for working with multiple files.

Course Outcomes	
1	Implement object oriented programming concepts using C++ Language.
2	Apply the principles of virtual functions and polymorphism.
3	Analyzing and handling files using C++.
4	Implement concept of Function Overloading and Operator Overloading.

RDBMS with Oracle Practical

Semester	**IV**	Total credit	2
Course code	**BCA 1411C**	Credit pattern	P-4, T -00 ,P-50 marks
Course title	**Lab Course based on RDBMS with Oracle**		

List of Experiments:

1. SQL queries on DDL statements.
2. SQL queries on DML statements.
3. SQL queries on Operators-relational, Logical, Like, Between, IN operator
4. SQL queries on Oracle Functions and clauses
5. SQL queries on Join
6. Creating Views and index
7. PL-SQL block on branching statement.
8. PL-SQL block on looping statement.
9. PL-SQL blocks to create explicit cursor.
10. PL-SQL blocks to study attributes of explicit cursor.
11. PL-SQL blocks to create Trigger.

Course Outcomes	
1	Translate an information model into a relational database schema and to implement the schema using RDBMS.
2	Apply relational database theory to create database tables for SQL queries.
3	Apply advanced SQL features like views, indexes, synonyms, etc. for database management.
4	Analyze PL/SQL structures using PL/SQL block: functions, procedures, cursors and triggers for database applications.

PHP-I

Course Objectives:

- PHP Basic syntax for variable types and calculations.
- Creating conditional structures
- Storing data in arrays
- Using PHP built-in functions and creating custom functions
- Understanding POST and GET in form submission.

MODULE NO.	CONTENT	HOURS
MODULE 1	**INTRODUCTION TO PHP:** Introduction to PHP Evaluation of Php, Basic Syntax, Defining variable and constant, Php Data type, Operator and Expression. Decisions and loop Making Decisions, Doing Repetitive task with looping, Mixing Decisions and looping with Html.	15
MODULE 2	**PHP FUNCTIONS** What is a function, Define a function, Call by value and Call by reference, Recursive function, String Creating and accessing, String Searching & Replacing String, Formatting String, String Related Library function	15

Course Outcomes	
1	Implement basic functions of PHP.
2	Design a responsive web site using PHP, HTML and CSS3.
3	Analyze the construction of a web page and relate how PHP and HTML combine to produce the web page.
4	Compare and contrast PHP variable types, and relate the advantages and disadvantages of PHP variables with local or global scope.

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BCA-II Sem-IV

Data Structure Using C++

Semester	**IV**	Total credit	4
Course code	**BCA-1412D**	Credit pattern	L-60, T -100 marks,P-30
Course title	**Data Structure Using C++**		

Course objectives	
1.	Understand the concept of Abstract Data Type.
2.	Understand basic data structures such as arrays, linked lists, stacks, queues, and Tree with its applications
3.	Understand various searching & sorting techniques

Module	Content
I	**Introduction to data structures** Introduction to Array, Introduction to Data Structures, Concept of Abstract Data types, Array as ADT, Data structures and its types, Data structures operations
II	**Searching and Sorting and Methods** Introduction to Searching and Sorting, Searching: Linear search, Binary search and hashing, Sorting: Bubble Sort, Insertion sort, Selection sort, Merge sort,
III	**Stacks and Queues** Introduction to stack, Primitive Stack operations: Push & Pop, Array and Linked Implementation of Stack in C++, Application of stack: Prefix and Postfix Expressions Evaluation, Definition of queue, Operations on queue, Types of queue-Linear, Circular, Applications of queue
IV	**Linked Lists and Trees** Introduction to Pointer, Introduction to linked lists, Implementation of Linked list, Types of Linked List: Singly, Doubly and Circular, Operations on linear linked list: Traversal, Insertion, Deletion, Searching Trees : definition, terminologies, representation, types, Tree Traversal- (Preorder, Inorder, Postorder)

Learning Resources: Reference Books

1. Data Structure Using C++ by YashavantKanetkar
2. Classic Data Structures-D. Samanta, Prentice Hall India Pvt. Ltd.
3. Data Structures using C and C++-YedidyahLangsam, Moshe J. Augenstein, Aaron M. Tenenbaum, Pearson Education
4. Data Structures: A Pseudo code approach with C, Richard Gilberg ,Behrouz A. Forouzan,

Cengage Learning 5. Data Structures Using C & C++ by Rajesh K. Shukla, Wiley india Pvt. Ltd 6. Algorithms and Data Structures, Niklaus Wirth, Pearson Education

Course Outcomes	
1	Use and implement appropriate data structure for the required problems using a programming language such as C++.
2	Write programs for various searching & sorting techniques.
3	Implementing various data structures viz. Stacks, Queues.
4	Implementation of Linked Lists and Trees.

Advanced Web Technology

Semester	**IV**	Total credit	4
Course code	**BCA-1413D**	Credit pattern	L-60, T -100 marks,P-30
Course title	**Advanced Web Technology**		

Course objectives	
1.	To design and implement website and to know the latest technical know-how's.
2.	Develop basic programming skills using JavaScript
3.	Develop server side scripting using PHP

Module	**Descriptions**
I	HTML Forms: :- Overview of HTML5 and Revisions on FORMS ,CSS ,Inserting Image, Creating websites, Hyperlinks,<DIV> tag
II	Java Script: Overview, Client-Side JavaScript, Advantages of JavaScript, Limitations of JavaScript, Syntax:- First JavaScript Code, Internal File, External File, Java Script Variables:- Data types, Variables, Operators:- Reserve words ,Control statements, Loops, Function:- Function Definition.
III	Events in JavaScript &DOM: What is an Event?, onclick Event Type, onsubmit Event Type, onmouseover and onmouseout, Standard Events, Dialog Box:- Alert Dialog Box, Confirmation Dialog Box, Prompt Dialog Box, JAVA Script Objects:- Object Properties, Object Methods, User-Defined Objects, Defining Methods for an Object DOM (Document Object Model), Array, String, Form Validation:- Basic Form Validation.
IV	Introduction to PHP: History, WebServer, WAMP server, Basic Programming Concepts of PHP : Syntax, Operators, Variables, Constants, Control statement loops ,Language construct and functions, Function – Syntax, Arguments, Variables, References, Returns and Variable Scope.
	Reference Books Recommended : 1. Web Technologies by Black Book 2. HTML, CSS & JavaScript by SAMS-Pearson .

Course Outcomes	
1	Understand Web designing techniques.
2	Develop commercial web development.
3	Organize content, hosting and web publishing.
4	Create well-formed valid HTML documents.

Principles of Marketing

Semester	**IV**	Total credit	4
Course code	**BCA-1414 D**	Credit pattern	L-60, T -100,P-00
Course title	**Principles of Marketing**		

Course objectives	
1	To understand the concepts of marketing management
2	To learn about marketing process for different types of products and services
3	To understand the marketing environment

Module	Content	Teaching Hrs.
I	Introduction : Meaning, & definition of Marketing, features of Marketing, Significance of marketing, core concepts of Marketing- Need, Want, Demand, Value, Satisfaction, exchange, transaction & relationship. Modern Marketing concept, holistic marketing & green marketing. Marketing in 21st Century- Challenges & opportunities.	**15**
II	A) Distribution Marketing Management : Introduction, Need for Marketing Channels, Decision involved in setting up the channels, Channel Management strategy B) Consumer Behaviour: Meaning & significance of consumer behaviour, factors affecting consumer behaviour.	**15**
III	Environmental analysis and Marketing Mix: - Elements in Macro & Micro environment, Analysis of their impact on Marketing function of an organization Marketing Mix-meaning , definition, elements of marketing mix.	**15**
IV	A) Marketing of Services- Meaning, Characteristics of services, problems in services Marketing, Outsourcing of I.T. services. B)E- Marketing: Concept & techniques, significance of e-Marketing in 21st Century	**15**

Learning Resources: Reference Books
1 Reference Books 1. Essential of Management by Kncotz & O' Donnel. 2. Principles & practice of Management by Geeage Terry. 3. Principles & Practice of Management by Tripathis C.reddy 4. Management a global Practice-Heinz Welthrich & Harold Koontz. 5. Management –L.M.Prasad 6. Fundamentals of Management – Stepham P. Robbins

Course Outcome:	
1	Understand the marketing concepts and its evolution.
2	Know the consumer behaviour and their decision making process.
3	Make decision on product, price, promotion mix and distribution.
4	Set standard and measure service quality and productivity.

E-Commerce

Semester	IV	Total credit	4
Course code	**BCA-1415D**	Credit pattern	L-60, T -100 marks,P-00
Course title	**E Commerce**		

Course objectives	
1	The objective of the course is to familiarize students with models of E commerce and basic concepts of Ecommerce.
2	This course aims of imparting knowledge about the Electronic Data Interchange, E-Payment System, E-Security and Security Solutions.

Module	Content	Teaching Hrs.	% of syllabus changes
I	**Introduction to E-Commerce:** Defining Commerce; Main Activities of Electronic Commerce; Benefits of E-Commerce; Broad Goals of Electronic Commerce; Main Components of E-Commerce; Functions of Electronic Commerce – Communication, Process Management, Service Management, Transaction Capabilities; Limitations, Challenges and opportunities, Process of E-Commerce; Types of E-Commerce; Role of **Internet and Web in E-Commerce**; **Technologies Used**; E-Commerce Systems; Pre-requisites of E-Commerce; Scope of E-Commerce; E-Business Models. EDI- Concept, Components, working mechanism of EDI, Advantages and disadvantages of EDI. **Difference between E-Business and E-Commerce, Introduction to M-Commerce.**	**15**	
II	**Electronic payment System** Concept of e-payment, Difference between traditional and electronics payment system, **UPI, NCPI,** Digital cash, Credit and Debit card system, Smart Card, **E Wallet**, Prepaid, post paid and instant payment system, Electronic funds transfer, Concept of e-banking.	**15**	**15%**

III	**E-Security** Concept of E-security, Security threats- concept and types, Malicious code, Phishing and identity theft, Hacking and cyber vandalism, Credit card fraud/Theft, Spoofing, Denial of service (DoS), Firewall and proxy server.	**15**	
IV	**Security Solutions** Concept of encryption and decryption, Symmetric and asymmetric key encryption, Cipher text, Digital Envelopes, Digital certificates, Security socket layer (SSL), Limitations of encryption solutions.	**15**	

Learning Resources: Reference Books

1. E-Commerce- Kenneth C.Laudon and Carol GuercioTraver
2. Internet marketing and E-commerce-Ward Hanson and KirthiKalyanam
3. E-Commerce Concepts , Models , Strategies by -- G.S.VMurthy
4. E-Commerce by --Kamlesh K Bajaj and DebjaniNag
5. Electronic Commerce by --Gary P.SchneiderE-Commerce A Managers Guide, RaviKalkota

Course Outcomes	
1	To understand the features, functions and common practices of E-Commerce.
2	To understanding on how internet can help business grow.
3	To understanding on the importance of security, privacy, and ethical issues as they relate to E-Commerce.
4	To understanding on how innovative use of the E-Commerce can help developing competitive advantage.

Computer Oriented Statistical Methods

Semester	IV	Total credit	4
Course code	**BCA-1416D**	Credit pattern	L-60, T -100 marks,P-00
Course title	**Computer Oriented Statistical Methods**		

Unit	Contents	Hours Allotted
1	A] **Introduction to Statistics:** 1.1 Meaning of the word Statistics. 1.2 Scope of Statistics: In Industry, Economics, and Management. 1.3 Meaning of primary and secondary data. 1.4 Qualitative and Quantitative data, Discrete and Continuous variable, Frequency and Frequency Distribution, Graphical representation of data: Frequency polygon, frequency curve, Histogram, ogive curves. 1.5 Illustrative Examples. **B] Sampling Techniques:** 1.6 Need and meaning, Definitions of Population, Sample, Sampling. 1.7 Advantages of Sampling over Census method. 1.8 Methods of Sampling, Simple random sampling with and without replacement, Stratified random sampling (only concept and real-life examples).	**15**

2	**Measures of Central Tendency (Averages):** 2.1 Concept of Central Tendency. 2.2 Requirements of good statistical average. 2.3 Arithmetic Mean: Definition, Properties of A.M. (without proof), Combined mean. 2.4 Positional Averages: Median and Mode, Determination of mode andmedian by graph, Partition values (Quartiles and Deciles). 2.5 Empirical relation between Mean, Median and Mode. 2.6 Merits and Demerits of Mean, Median and Mode. 2.7 Numerical examples.	**15**
3	**Measures of Dispersion:** 3.1 Concept of Dispersion, Requirements of good measures of dispersion. 3.2 Absolute and Relative measures of dispersion. 3.3 Range- Definition, Coefficient of Range. 3.4 Quartile Deviation (Q.D.) Definition, Coefficient of Q.D. 3.5 Mean Deviation (M.D.): Definition of M.D. about Mean, Coefficient of M.D. about mean. 3.6 Standard Deviation (S.D.) and Variance: Definitions, Coefficient of S.D.,Combined S.D. for two groups. 3.7 Coefficient of Variation (C.V.): Definition and its uses. 3.8 Merits and Demerits of Range, Q.D., M.D. and S.D. 3.9 Numerical Examples.	15
4	**Analysis of Bivariate data:** Correlation: 4.1 Concept and types of correlation. 4.2 Methods of studying correlation, scatter diagram, Karl Pearson's correlation coefficient (r), computation of r for ungrouped data, interpretation of r = -1, r =0, r=+1. 4.3 Spearman's rank correlation coefficient(R), computation of R (with and without tie). **Regression:** 4.4 Concept of regression. 4.5 Lines of regression, regression coefficients. 4.6 Properties of regression coefficients (statement only). 4.7 Numerical examples on correlation and regression.	15

Reference Books: -

1. Statistical Methods, by Dr. S. P. Gupta, Sultan Chand and Sons Publication.
2. Introduction to Statistics, by C.B. Gupta.
3. Mathematical Statistics, by H.C. Saxena and J.N. Kapur.
4. Business Statistics, by S.S. Desai.
5. Business Statistics, by G.V. Kumbhojkar.
6. Fundamentals of Statistics, by S.C.Gupta.

Course Outcomes	
1	Have the versatility to work effectively in a broad range of analytic, scientific, government, financial, health, technical and other positions.
2	Recognize the importance and value of mathematical and statistical thinking, training, and approach to problem solving, on a diverse variety of disciplines.

3	Recognize and appreciate the connections between theory and applications.
4	Be able to independently read mathematical and statistical literature of various types, including survey articles, scholarly books, and online sources;

Data Structure using C++ Practical

Semester	**IV**	Total credit	2
Course code	**BCA-1417D**	Credit pattern	P-4, T -00 ,P-50 marks
Course title	**Lab Course based Data Structure using C++**		

List of Experiments:

1. Write a program to implement stack using static method.
2. Programs to implement applications of stack.
3. Write a program to implement Queue using static method.
4. Programs to implement applications of queue.
5. Write a program to create linked list, add node to linked list and Remove node from linked list.
6. Write a program to implement types of linked list.
7. Write a program to implement stack and queue dynamically.
8. Write a program to sort given elements using bubble sort, insertion sort, and selection sort
9. Write a program to search given element using Linear Search.
10. Write a program to search given element using Binary Search.

Course Outcomes	
1	Choose appropriate data structure to represent data items in real world.
2	Design programs using data structures like stack, queues, binary tree.
3	Develop programs of searching and sorting.
4	Develop programs using static and dynamic implementation.

Advanced Web Technology Practical

Semester	**IV**	Total credit	2
Course code	**BCA-1417D**	Credit pattern	P-4, T -00 ,P-50 marks
Course title	**Lab Course based Advanced Web Technology**		

Credits:2	**List of Practical's:**
Sr. No.	**Description**
1	Write a HTML program to use <p>, , <h2>, <ul) tags and apply CSS
2	Write a JavaScript program to test the first character of a string is uppercase or not
3	Write a JavaScript program to use for loop to to print even and numbers from 1 to 15
4	Write a JavaScript program to use basic arithmetic operations(+,-,*, / ,%)
5	Write a HTML program using Registration Form : Name, Password, E-mail, Mobile, City
6	Write a JS program to convert a string lower to uppercase and upper to lowercase
7	Write a JS code which calculates square of any number using form

8	Write a JS code to count no. of words in the given string
9	Write a JS program to check if a person is eligible to vote or not.
10	Write a JavaScript program to accept a number and find its factorial.

Course Outcomes	
1	Choose appropriate data structure to represent data items in real world.
2	Design programs using data structures like stack, queues, binary tree.
3	Develop programs of searching and sorting.
4	Develop programs using static and dynamic implementation.

Mini Project

Semester	IV	Total credit	2
Course code	**BCA-1418D**	Credit pattern	P-2, T -00 ,P-50 marks
Course title	**Mini Project**		

The group of students may undertake a software project in consultation with the internal guide. The group size should not exceed four students. The student is expected do project in any language studied in 5th or earlier Semesters. The mini Project will be evaluated by the external examiners appointed by University.

Course Outcomes	
1	Understand how to identify the issues and challenges of industry.
2	Prepare report on the application of emerging technologies in the selected industry.
3	Implement hardware and/or software techniques for identified problems.
4	Test and analyze the modules of planned project.

Skill Enhancement Course

Course Name: PHP-II

Marks: 50 **Credits: 2**

Course Objectives:

- PHP Basic syntax for variable types and calculations.
- Creating conditional structures
- Storing data in arrays
- Using PHP built-in functions and creating custom functions
- Understanding POST and GET in form submission.

MODULE NO.	CONTENT	HOURS
MODULE 1	**ARRAY IN PHP:** Anatomy of an Array, Creating index based and Associative array Accessing array, Element Looping with Index based array, Looping with associative array using each () and foreach(), Some useful Library function.	15
MODULE 2	**File Handling Html Form with PHP**: Capturing Form, Data Dealing with Multi-value filed, and Generating File uploaded form, redirecting a form after submission. Working with file and Directories Understanding file& directory, Opening and closing, a file, Coping, renaming and deleting a file, working with directories, Creating and deleting folder, File Uploading & Downloading.	15

Course Outcomes	
1	Analyze PHP scripts and determine their behavior.
2	Construct PHP scripts to create dynamic web content.
3	Create PHP scripts capable of inserting and modifying data in a MySQL database.
4	Design web pages with the ability to retrieve and present data from a MySQL database.

Question Paper Pattern

Duration: 3 Hours

Total Marks –70

Instructions: 1) Q.1 & Q.8 is compulsory.
2) Attempts any four Questions from Que. No.2 to Que. No.7.
3) Figures to the right indicate full marks.

Que. No.	Type of question	Marks
1	MCQ	5
2	Long answer question	14
3	Long answer question	14
4	Long answer question	14
5	Long answer question	14
6	Long answer question	14
7	Long answer question	14
8	Short notes on (Any 3 out of five)	9

1. Nature of Practical Question Paper:

There will be three questions of 15 Marks each, out of which student have to attempt any two Questions and 10 marks for journal and 10 marks for oral for 2 credit lab course and time duration is two hours.
For four credit lab course there will be four questions of 25 Marks each, out of which student have to attempt three questions and 10 marks for journal and 15 marks for oral and time duration is three hours.

Practical Examination has to be conducted by the panel of two examiners appointed by College Examination department. The panel members have more than five years' experience as full time teacher.

2. Internal Marks Distribution:

- Ten Marks for Tests. (Two test of 10 Marks would be conducted and convert these marks to Ten marks.)
- Ten Marks for designing apps or software or working model/ Field Work/online learning activity or Home Assignment etc.
- Five Marks for Oral.
- Five Marks for Department activity participation and Attendance.(75% to 80%- 02 marks, 81% to 85 %- 03 marks, 86% to90%- 04, marks 91% to 100% - 5 mark)

VIVEKANAND COLLEGE KOLHAPUR ESTD JUNE 1964 (Autonomous)

HEAD
DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(EMPOWERED AUTONOMOUS)